Fluctuations in Output Mean Little

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Maintaining Average at Level of Requirements Is Important Factor. Conservation Movement Shows Results

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

Fluctuations in crude oil production, as exemplified by the substantial increase registered last week after a decline of 25,000 barrels daily was recorded during the previous week, are natural consequences of development activities in the different flush fields and the working out of the conservation movements. Such fluctuations have comparatively little influence on the general situation as long as the average output remains fairly stationary around the 2,600,000-barrel-a-day mark.

The Oklahoma City Pool in Oklahoma is a good example of how production increases and declines, due to curtailment resulting from limited pipe line facilities and other conditions. On Monday morning of this week the output of the Oklahoma City Pool was 46,000 barrels while on the following morning, or Tuesday of this week, production there was 132,000 barrels. A big decline probably will be registered on gauges during the latter part of the week.

While potential production of Oklahoma City is rated now at 435,000 barrels daily, pipe line facilities and the water situation in connection with many of the wells will hold production there down to requirements as no storage is being built in the field. The 50 per cent curtailment program has been inaugurated by operators but as pipe lines serving the field have a capacity now of only 145,000 barrels daily, production undoubtedly will not be permitted to exceed that figure, at this time at least.

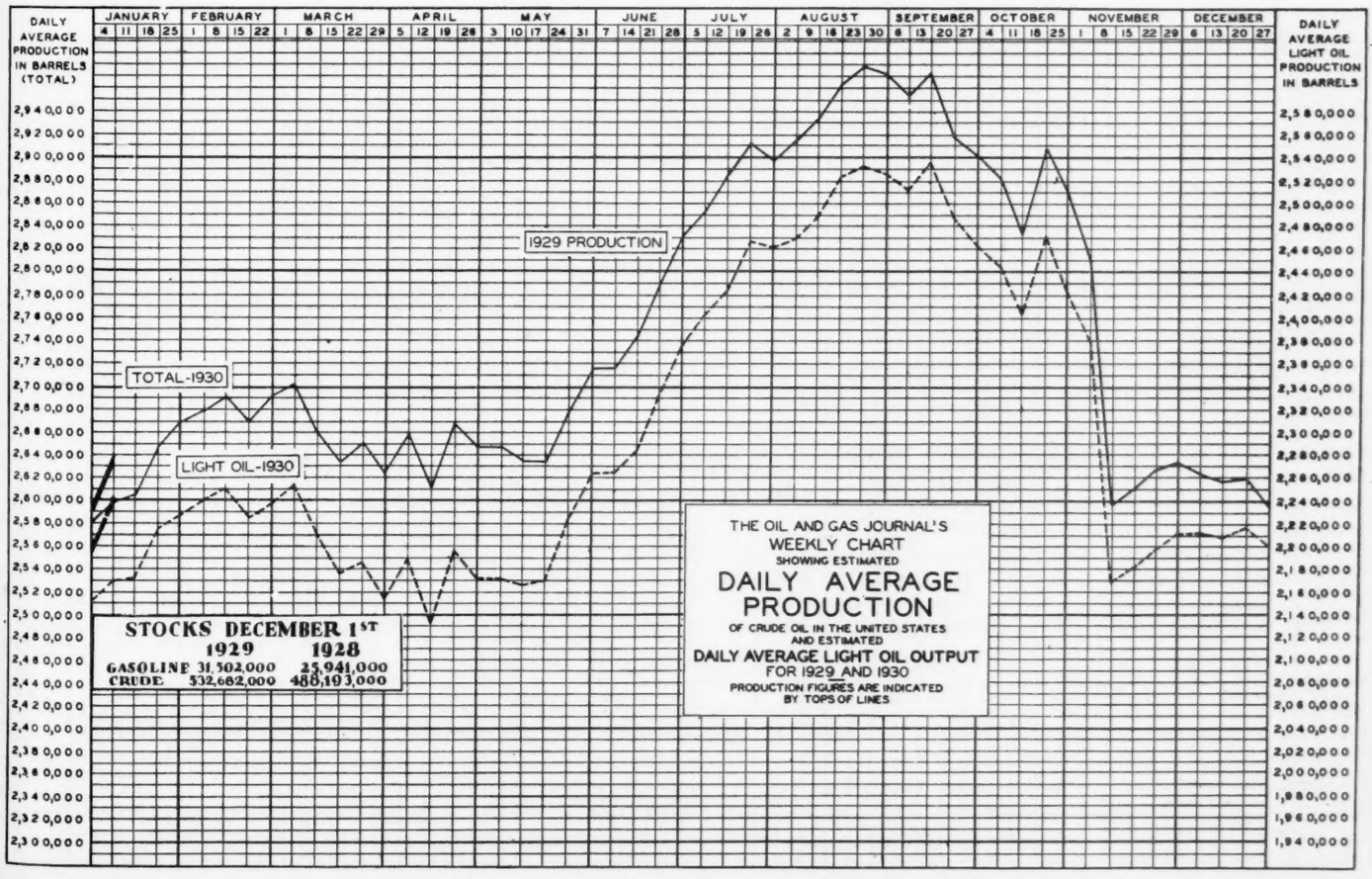
Figures of the Bureau of Mines for November reflect the benefits accruing from the conservation movements in different areas. Data available for December indicate another withdrawal of crude from storage during that month, showing a healthy condition as far as crude oil production is concerned. As has been emphasized before, the depressing factor in the entire situation is the large quantity of crude being run to stills by refiners and the piling up of gasoline stocks. The producing end of the industry, however, seems determined to keep the conservation movement entirely effective and thereby hold the price structure at present levels. The belief is growing such action will force refiners to curtail their runs to stills.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended January 4, and a comparison with the previous week follows:

	Jan. 4		Dec. 28	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	99,270	.....	79,115	.....
St. Louis-Pearson	48,440	.....	50,705	.....
Seminole	229,210	.....	217,655	.....
Northern Miscellaneous	241,285	.....	241,920	.....
Southern Fields	57,080	.....	57,410	.....
Total Oklahoma	675,285	.....	646,805	.....
West Texas—				
Hendricks	90,101	.....	93,830	.....
Yates	144,714	.....	140,105	.....
Remainder	109,004	.....	110,976	.....
Total West Texas	343,819	.....	344,911	.....
North Louisiana	33,110	5,190	32,780	5,210
Arkansas	18,335	42,050	18,910	41,705
North Central Texas	140,168	.....	138,943	.....
Texas Panhandle	100,831	.....	102,596	.....
East Central Texas	23,499	.....	23,317	.....
Kansas	113,940	.....	113,410	.....
Total Mid-Continent Area	1,448,987	47,240	1,421,672	46,915
Gulf Coast	.....	177,416	.....	176,397
Southwest Texas	.....	56,617	.....	54,398
Eastern	140,000	.....	139,000	.....
Rocky Mountain Area	74,861	.....	67,938	.....
California—				
Santa Fe Springs	169,000	.....	163,000	.....
Long Beach	104,500	.....	105,000	.....
Huntington Beach	41,000	.....	41,000	.....
Elwood	27,000	.....	26,000	.....
Ventura Avenue	51,000	.....	51,000	.....
Seal Beach	28,500	.....	29,000	.....
Remainder of State	161,500	114,000	159,000	115,000
Total California	582,500	114,000	574,000	115,000
Total United States	2,246,348	395,273	2,202,610	392,710
Grant Total		2,641,621		2,595,320

Total Increase, 46,301 Bbls.; Light Oil Increase, 43,738 Bbls.



Natural Gasoline Quotations Lower

Prices Slump Rapidly With Dull Spot Market. Domestic Grades of Refinery Gasoline Continue Weak

By C. O. Willson

The past week in the Oklahoma (Group 3) refined market was largely a duplication of the previous week. The domestic grades of refinery gasoline continued slow and additional sellers have seen fit to lower their prices in an effort to increase their spot sales. With the start of a new month a number of refiners throughout the Mid-Continent were able to start shipments on their export orders that have been placed for January and February delivery. Due to this business prices on the 390 and 375 endpoint grades are fairly firm despite the weakness in the lower gravity and higher endpoint grades.

With a continued slow demand natural gasoline slumped rapidly during the week reaching the lowest price levels of the past year. New business has been so slow in materializing that a panicky condition has developed among some of the manufacturers who have been anxious to move their output. It has given the buyers a chance to dominate the market and they have had little difficulty in securing price concessions. Substantial quantities of Grade AA have been sold on a price range of 5½ to 5¾ cents and on Tuesday one large order is reported to have been placed for delivery over the remainder of the month at 5¼ cents. The B, BB and C grades were freely available at 5 cents.

Natural Gasoline Situation

Low priced natural gasoline early in the year is not an unusual development. Last year Grade AA slumped to a low of 5½ cents in the middle of January and then recovered to a high of 8 cents by the first of April. In 1928, when Grade AA brought a high of 10¾ cents in the summer months, it sold in April of that year for 4¼ cents.

With this past history in mind some of the larger manufacturers are not unduly concerned with the present market situation. Many of the refinery buyers of natural gasoline are now storing a part of their gasoline output. During this period there is always a dearth of buying, the refiners not wishing to store the blends of refinery gasoline and natural gasoline.

Due to the low spot prices at least two of the large buyers are endeavoring to secure favorable long-time contracts. One buyer is reported to be seeking contracts on a basis of 1 per cent under the U. S. Motor gasoline market to extend through 1930. Another buyer is said to have offered one-half cent under the U. S. Motor price. So far as known no contracts have been closed on this basis. Most manufacturers take the position that a Grade AA natural gasoline should at least bring the U. S. Motor gasoline price in yearly contracts.

There are several favorable factors in the natural gasoline situation which are pointed out by the sellers. There has been a substantial decrease in the production of natural gasoline both in California and the Mid-Continent. This is due to the smaller casinghead gas supply brought about by the curtailment of crude oil production. The November report of the Bureau of Mines which will be found on page 127 of this issue reflects this situation. This curtailment will continue at least 90 days and it is probable there will be a restriction in casinghead gas supplies in flush fields throughout the year. This should at least stop the steady increase in output which was characteristic of the natural gasoline industry throughout the greater part of 1929. Another factor is the favorable storage situation in the Mid-Continent.

On the consuming side, manufacturers

(Continued on Page 142)

REFINED MARKET BAROMETER

The action of the Standard Oil Co. of New Jersey in announcing a new policy in regard to gasoline tank wagon and service station and kerosene tank wagon prices effective in several eastern and southeastern states overshadowed all other developments in refinery markets during the past week. While the change did not immediately affect tank car prices at refineries it is a development of the keen competitive conditions which have prevailed over the past year in which increasing quantities of California and South American gasoline have been sold in East Coast territory. It is expected that the change in the distributing market will be reflected in tank car prices at representative eastern points in the near future. What changes were made in the refinery gasoline market over the past week were downward, the spot demand being generally slow. Kerosene continues weak at interior points with prices firm at coastal points. Fuel oil and gas oil prices generally steady. Natural gasoline was weak in the Mid-Continent with higher prices in California. Steam refined cylinder stocks, bright stocks and some grades of neutral oils softer. Coastal oils firm. No improvement in demand for wax.

Mid-Continent—Fuel oils and gas oils generally strong. Heavy export movement of high gravity gasolines with domestic market slow and prices lower. Kerosene soft. Furnace oil prices lower in some areas. Natural gasoline prices slump rapidly. Neutral oils soft. No change in cylinder stock prices.

East Coast—Lowering of gasoline tank wagon and service station prices expected to be reflected in refinery prices. Kerosene firm. No change in fuel oil. Steam refined cylinder stocks and bright stocks slow.

Chicago—Gasoline market inactive. Fuel oil strong. Furnace oils easy. Kerosene slow. No change in other products.

California—Natural gasoline prices higher due to curtailment in output. Other products unchanged.

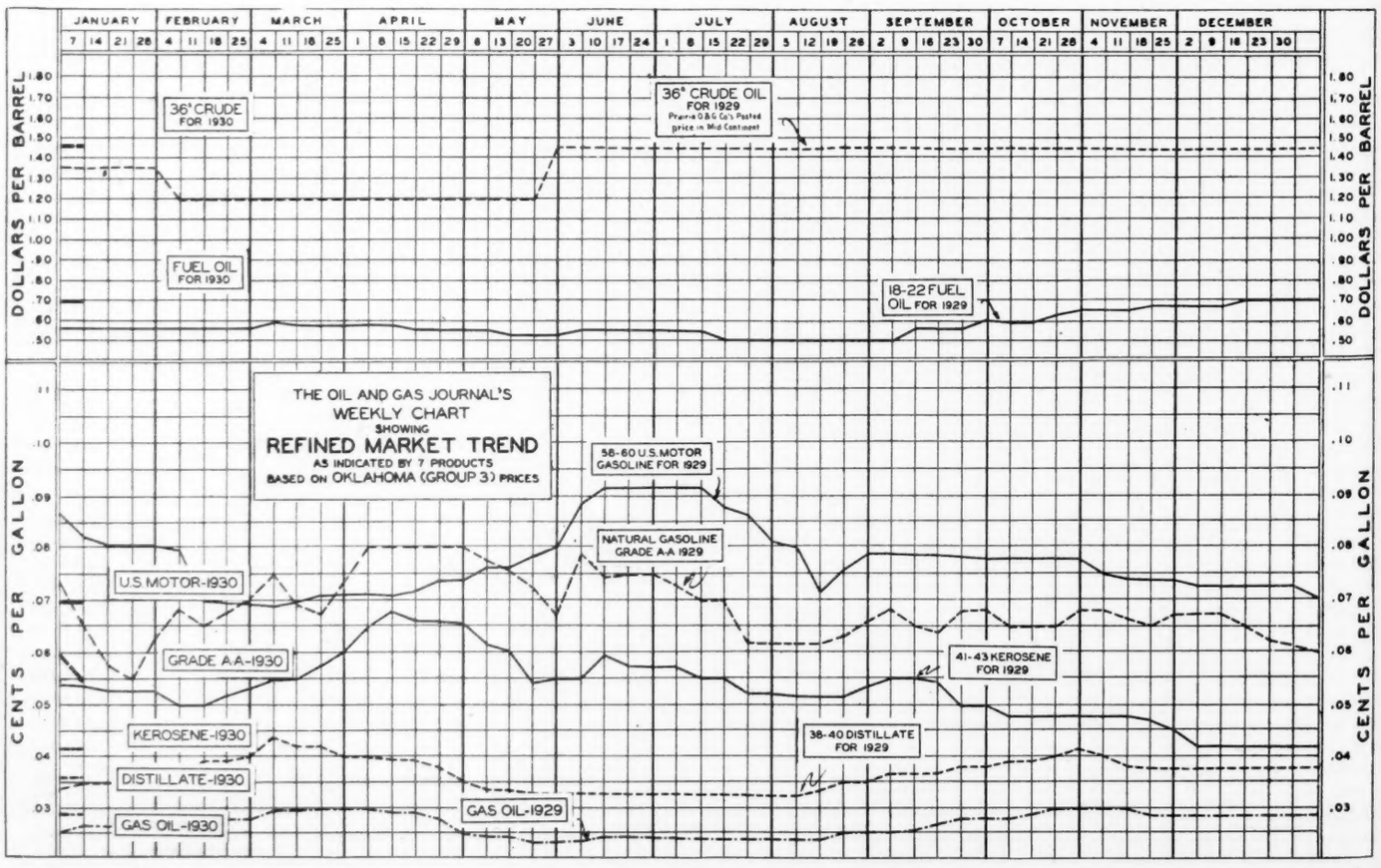
Gulf Coast—Gasoline weak and prices lower. Better demand for pale and red oils. Slow movement of fuel oil.

MID-CONTINENT REFINERY OPERATIONS

(Data given in thousands of barrels)

	Crude run to stills			Gasoline prod.			Gasoline stocks†		
	Nov., 1929	Oct., 1929	Nov., 1928	Nov., 1929	Oct., 1929	Nov., 1928	Nov., 1929	Oct., 1929	Nov., 1928
Okla., Kans., etc.	9,689	9,962	9,189	5,312	5,435	5,111	3,249	2,782	2,637
Texas*	4,631	5,049	4,328	2,023	2,075	1,641	1,182	898	768
Louisiana-Ark.*	1,916	2,211	2,067	770	791	586	253	303	163
Total	16,236	17,222	15,584	8,105	8,301	7,338	4,684	3,983	3,588

*Except Gulf Coast. †End of month. Data based on Bureau of Mines reports.



Supply Brought in Line With Demand

Government's Report for November Shows Crude Oil Curtailment Measures Obtained Desired End. Stocks Reduced

By C. O. Willson

Estimates made late in October by representative producers and pipe line operators relative to the curtailment necessary to bring the crude oil supply in line with the demand were substantiated in the latest report of the Bureau of Mines which covers production and refinery operations for November. The voluntary curtailment program which was made effective in the flush areas of all the main producing states had as its aim the elimination of excess supplies and where feasible permit those who stored oil the first 10 months of the year to draw on their inventories. This action was taken by operators in individual states based largely on conditions within those states and it was feared by some that it would fall short of the desired national objective.

The Government's report for November, the first full month in which the program was effective, indicates that the separate action of the states obtained the goal of bringing the national supply in line with the demand with an excess of latter so that for the first time in over a year there was a reduction in crude oil inventories. For the country as a whole crude oil stocks dropped from 537,619,000 bbls. on October 31 to 532,682,000 bbls., a reduction of 4,937,000 bbls. Both stock figures include some California fuel oil due to the inability to segregate the storage of heavy nonrefinable crudes and some of the fuel oil coming from the refineries.

The greatest improvement in regard to crude oil storage developed in the fields east of California. In the latter territory crude oil stocks dropped from 384,502,000 bbls. at the start of November to 380,393,000 bbls. at the close.

This decline of over 4,000,000 bbls. was the largest monthly drop in over three years. The decline in storage was general east of California including a small drop in the crude oil inventories of refiners. The greater part of the decline, however, was in the Mid-Continent Field. Crude oil storage in Oklahoma, Kansas and Texas except the Gulf Coast dropped 2,722,000 bbls. in November. It is interesting to note in this connection that the crude oil stocks east of California at the end of November were less than 10,000,000 bbls. greater than on the same date last year, with California's storage over 38,000,000 bbls. greater.

Reduction General

Although the Mid-Continent situation was improved according to the Government's figures through the smaller production of flush areas in Greater Seminole, Oklahoma, and West Texas, the greater part of the reduced production comes from the more settled areas. The daily average production of practically all the states was less in November than in October. There was a decrease of 24,000 bbls. daily in the Greater Seminole area and 12,000 bbls. daily in West Texas. The principal contribution of these areas lay in the fact that new wells were curtailed so that a large increase in production was prevented.

California Situation

While the withdrawals in crude oil storage in California were relatively small in November the Government's report does show that the drastic curtailments made in the production of flush areas was sufficient to bring an equilibrium between supply and demand after a year of heavy accumulations. California production due to the curtailment program dropped from 867,700 bbls. daily in October to 710,600 bbls. daily in November. Of this 156,400 bbls. reduction in daily output the Long Beach Field contributed 47,000 bbls. and Santa Fe Springs 107,000 bbls.

So far as the crude oil is concerned a reduction in imports also helped the domestic situation. Crude oil imports which have been showing a downward trend for several months dropped from 5,766,000 bbls. in October to 4,535,000 bbls. in November. Imports from Venezuela increased about 7,000 bbls. daily with a decrease of 10,000 bbls. daily in Mexican imports. There was a large drop in imports from Colombia, an average of 14,000 bbls. daily in November, comparing with an average of 51,300 bbls. in October.

Future Trend

Taken as a whole the November report as previously stated supports the views of those who were willing to hazard predictions regarding the probable crude oil

(Continued on Page 106)

CRUDE OIL AND REFINERY PRODUCTS SITUATION SUMMARIZED

(Bureau of Mines Reports—First 11 Months 1929 and 1928)

SUPPLY AND DEMAND—CRUDE OIL (Bbls.)

First 11 months	Total supply	Total demand*	Excess Supply	Excess Pct.	Domestic production	Imports	Domestic Demand*	Exports	Stocks Nov. 30†
1929	998,292,000	950,011,000	48,281,000	5.0	925,264,000	73,028,000	925,726,000	24,285,000	532,682,000
1928	894,941,000	872,591,000	22,350,000	2.5	821,981,000	72,960,000	855,154,000	17,437,000	488,193,000
Increase ..	103,351,000	77,420,000			103,283,000	68,000	70,572,000	6,848,000	44,489,000
Increase	11.5%	8.8%			12.5%	.09%	8.3%	39.3%	9.1%

*Derived from government data for comparative purposes. Includes some California fuel oil. †Includes California fuel oil.

SUPPLY AND DEMAND—REFINERY PRODUCTS—GASOLINE (Bbls.)

First 11 months	Total supply	Total demand	Excess Supply	Excess Pct.	Domestic production	Imports	Domestic Demand	Exports	Stocks Nov. 30
1929	405,260,000	397,546,000	7,714,000	1.9	397,108,000	8,152,000	345,302,000	52,244,000	37,780,000
1928	346,889,000	351,020,000	*4,131,000	*1.2	343,011,000	3,878,000	301,913,000	49,107,000	29,185,000
Increase ..	58,371,000	46,526,000			54,097,000	4,274,000	43,389,000	3,137,000	8,595,000
Increase	16.8%	13.2%			15.7%	110%	14.4%	6.4%	29.4%
KEROSENE									
1929	52,494,000	52,129,000	365,000	7.0	52,306,000	188,000	33,793,000	18,336,000	9,366,000
1928	54,767,000	53,596,000	1,171,000	2.0	54,585,000	182,000	32,798,000	20,798,000	8,886,000
Increase ..	†2,273,000	†1,467,000			†2,279,000	6,000	995,000	†2,462,000	480,000
Increase	†4.3%	†2.8%			†4.3%	3.3%	3%	†11.8%	5.4%
LUBRICATING OIL									
1929	31,631,000	31,854,000	*239,000	*7.0	31,594,000	37,000	21,788,000	10,066,000	8,117,000
1928	31,676,000	31,615,000	61,000	2.0	31,665,000	11,000	21,438,000	10,177,000	7,921,000
Increase ..	†45,000	239,000			†71,000	26,000	350,000	†111,000	196,000
Increase	†1.4%	.7%			†.2%	236%	1.6%	†1%	2.4%
FUEL AND GAS OIL									
1929	430,493,000	417,277,000	13,216,000	.3	411,633,000	18,860,000	394,814,000	35,679,000	148,117,000
1928	396,366,000	388,790,000	7,576,000	.2	389,744,000	6,622,000	355,207,000	41,159,000	135,317,000
Increase ..	34,127,000	28,487,000			21,889,000	12,238,000	39,607,000	†5,480,000	12,800,000
Increase ..	8.6%	7.3%			5.6%	184%	11.2%	†13.3%	9.4%
PETROLEUM WAX (Lbs.)									
1929	617,632,000	543,017,000	74,615,000	13.7	580,970,000	36,662,000	250,283,000	292,134,000	185,559,000
1928	598,061,000	644,750,000	*46,689,000	*7.0	575,459,000	22,602,000	278,655,000	366,095,000	103,949,000
Increase ..	19,571,000	†101,733,000			5,511,000	14,060,000	†28,372,000	†73,961,000	81,610,000
Increase	3.3%	†15.8%			9.0%	62%	†10.2%	†20%	78.5%

*Excess demand. †Decrease. Note—Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

CRUDE OIL RUNS TO STILLS AND TOTAL ALL OILS (Bbls.)

First 11 months	Total crude to stills	Domestic crude to stills	Foreign crude to stills	Natural gasoline blended at refineries	Gasoline recovery crude oil†	Total supply all oils*	Total demand all oils*	Stocks all oils Nov. 30*
1929	907,045,000	836,711,000	70,334,000	41,470,000	43.78%	1,076,314,000	1,011,699,000	677,819,000
1928	833,666,000	762,635,000	71,031,000	31,975,000	41.14%	946,689,000	928,729,000	615,103,000
Increase ..	73,379,000	74,076,000	†697,000	9,495,000	2.64%	129,625,000	82,970,000	62,716,000
Increase	8.8%	9.7%	†1.0%	29.7%		13.7%	8.9%	12%

*Total all oils includes crude oil, refined products, natural gasoline and benzol. †Includes natural gasoline blended at refineries.

Submergible Electric Oil Well Pump

New Type Pump Equipment Shows High Efficiency in a Number of Installations in Oklahoma and Kansas Wells

By L. G. E. Bignell
Petroleum Engineering Editor

In 1916, a young Russian electrical engineer, graduate of the Russian Polytechnic Institute, designed an electrically driven centrifugal pump for lifting water from wells in his country. He hoped his invention would prove of vast benefit to his countrymen in assisting them to develop farm land where surface water was not obtainable in sufficient quantity for irrigation purposes.

This dream of Armais Arutunoff was shattered by the revolution which caused the confiscation of his properties, where he was employing several hundred men and made his escape from Russia necessary. With his wife and young baby he made his way into Germany, traveling a great part of the way on foot.

Mr. Arutunoff still had faith in his idea and succeeded in raising some capital in Germany and built about 100 of these pumps there that were used principally for pumping water for irrigation purposes.

However, he thought he saw a much larger field for his pumps in the United States and came here in September, 1923. He first interested Fairbanks-Morse Manufacturing Co. in his invention and that company took an option for a period of six months which was renewed for a second six months' period, but in 1924, Mr. Arutunoff again moved westward and came to Oklahoma where he talked with several of the largest oil producing companies and tried to interest them in his invention.

Interests Phillips Petroleum

In 1925, Mr. Arutunoff went to California and while there made connection with S. N. VanWert and A. R. McGuire and these men organized a small company and built one pump for an oil well, but because of lack of capital they were forced to abandon the California shop and they then came to Oklahoma again and made arrangements with the Phillips Petroleum Co., at Bartlesville, to take over the pump that had been made in California.

This pump handled 1,000 bbls. of water from a depth of 900 feet in 19 hours, and then failed due to the fact that the transmission cable became saturated with water.

These pumps were built to operate at a speed of 10,600 r.p.m. and at this speed bearing trouble developed. This was not necessarily an insurmountable difficulty for the manufacturers of bearings state that they can build bearings suitable for that speed. However, the pump was redesigned by Mr. Arutunoff and the operating speed reduced to 3,600 r.p.m. With the early pumps there was also some trouble experienced with the pump impellers and they were changed from cast iron to bronze.

This history of the electric oil well pump that is submergible in the well has been given at some length to show that this idea has persisted through many trials and now after seven of the pumps have been under rather constant use in the oil wells in Kansas and Oklahoma under regular field conditions and have proven themselves reliable and very efficient it is thought that the industry will be interested in a description of their design and performance.

Description of Pump

These units consist of three parts, the motor, protector and centrifugal pump, and are built in two sizes, those for wells with 6¼-inch casing and having a rated capacity of 3,000 bbls. of fluid per day and requiring 60 horsepower to operate, and the units for the 8¼-inch wells that are rated at 8,500 bbls. per day capacity and will require 175 horsepower to operate.

Either size pump is encased in seamless steel tubing that is made water and moisture tight at the motor end and the sections are joined together with flanges and stud bolts. To assemble the equipment which is shipped from the factory in three parts, the motor or lower portion of the unit is lowered into the casing until only the upper portion is exposed and then held in that position with clamps.

The protector, which is placed between the motor head and the bottom of the centrifugal pump, is then put in place and fastened with stud bolts and the coupling between the motor and pump shafts is assembled and the electrical conduit is attached to the connection at the upper end of the motor.

This portion of the equipment is then lowered still further into the well and the centrifugal pump attached, and lowered until only its upper end is above the top of the casing.

The upper end of the conduit is then attached to the pothead connection at the lower end of the electric cable that transmits the 3-phase, 60-cycle, 440-volt current from the surface to the bottom of the well.

When this connection has been made the next thing to do is to attach the tubing to the upper end of the pump and start to lower the equipment into the well, adding tubing as needed and attaching the electrical cable to it at regular intervals by means of special clips or clamps.

When the pump has been lowered to the required depth in the well, which position is determined to some extent by the height of the fluid column in the hole, the usual type of fittings are used at the top of the well to close the casing and to control the flow of fluid from the tubing.

The electrical cable is connected to the source of power in the derrick and everything is then in readiness to start pumping.

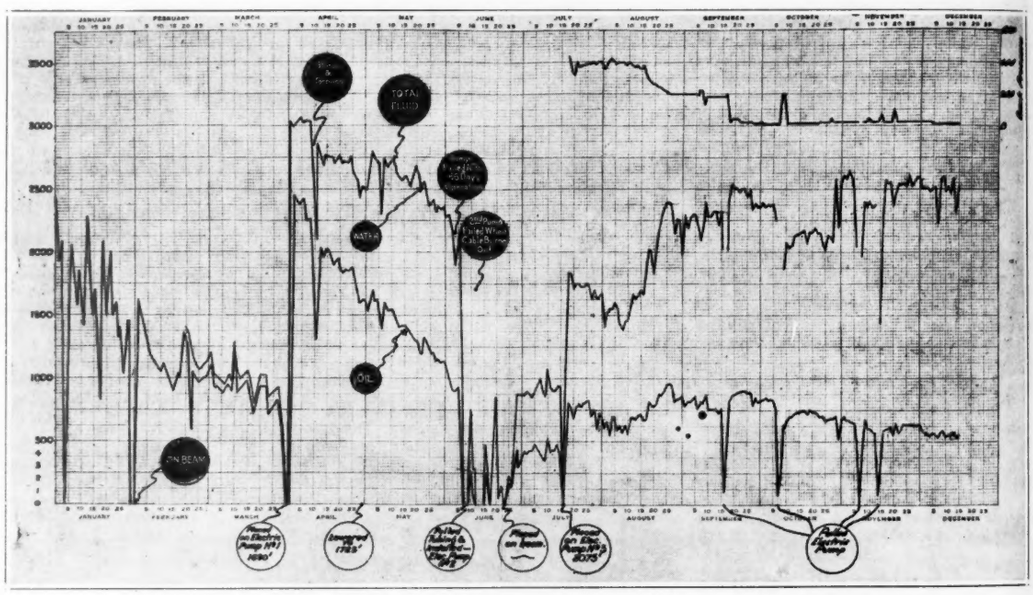
Motor 18 Feet Long

The motor is about 18 feet long and the protector about 2 feet long and the centrifugal pump is also about 18 feet long so that the whole pump as assembled is about 40 feet long.

The fluid enters the lower end of the pump through a screened opening and to start pumping it has been found necessary in some cases to insert in the lower end of the tubing, just above the pump outlet an inverted check valve that is kept closed by a coiled spring. The seat for this valve is above the valve disc, and there is one one-eighth-inch diameter hole in the valve disc, the only outlet for the fluid from the pump when it is starting.

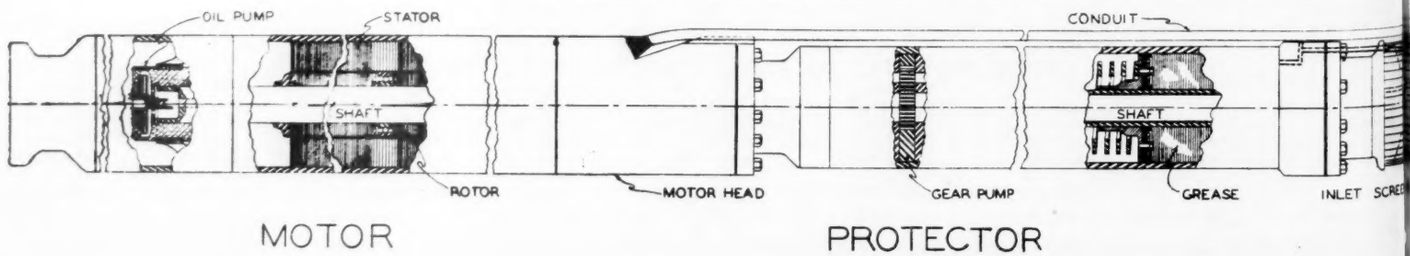
The gate valve at the upper end of the string of tubing is closed and the motor started and the pressure rapidly builds up at the pump and in the tubing until the tubing is filled with fluid that is not allowed to discharge until it is noted that there has been a drop in pressure at the pump.

This process only requires a very few minutes to complete, the exact time depending upon the amount of fluid required to pass through the one-eighth-inch hole in the check valve and fill the tubing. It appears that when the tubing is filled the pressure above the check valve is momentarily greater than the pressure being built up by the pump, and when the whole system is filled with fluid the centrifugal pump will no longer exert pressure, and the check valve therefore is snapped open and remains in the open position while the pump is running, only closing again when the pump is shut



Production curve giving comparison between well on beam and using the submergible electric oil pump.

Details of the submergible electric oil well pump showing relative position of motor, protector, pump, and connections at top of h



down and the fluid drains from the top side of the valve until the spring will close it.

This condition of starting is peculiar to the centrifugal pump because as used in oil wells it is not unusual to find that the fluid level on the suction side of the pump is so great that the impellers are in the center of a balanced hydrostatic column, and under this condition they will not pump until the discharge pressure is greater than the intake pressure.

Some wells with low fluid levels in the well do not require the check valve in the tubing and start by simply turning on the current and closing the upper gate valve until the gauge at the surface shows that the tubing is full, then opening the gate valve and permitting the oil and water to discharge into the receiving tanks.

Some of the men at the lease thought, before they saw the pump in operation, that it would tend to unscrew the tubing and drop itself into the hole, but such is not the case for as a matter of fact the tubing is actually in tension while the pump is in operation. This downward thrust is equal to the area of the impeller times the hydrostatic head expressed in pounds per square inch and has not been found excessive in any case.

The path of the fluid in the pump, which for the 6¼-inch well has 50 impellers, is through each impeller, and its diffuser, and then through the outlet at the top of the pump case and into the tubing.

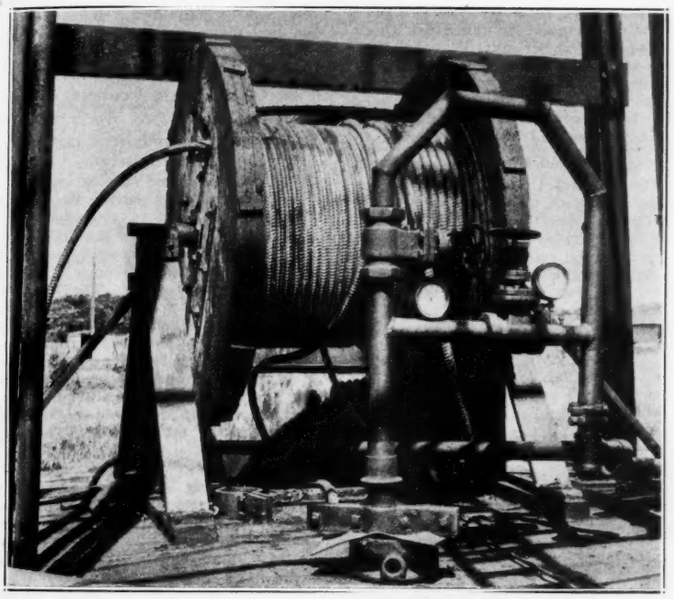
Handles Small Solids

The impellers are reduced at their periphery to slot-like openings only one-sixteenth inch wide and the blades of the impellers are so shaped that all fluid, with such sands and solid material as will pass through the screened inlet, is forced into the diffuser space at high velocity. It has been noted that pieces of shale one-sixteenth inch thick have been delivered into the receiving tank without damage to the pump.

Unless the entire peripherial slot opening in the impeller is closed the pump will continue to work, for even if one or two of the spaces between impellers became clogged, the fluid could still find outlet into the impeller next above by passing through the remaining open space in the peripherial slot.

It has been found that this pump does not tend to cut the oil any more than it would be cut by the ordinary pumping method and this might be accounted for in some instances by taking into consideration the fact that the ratio of oil, water and gas is changed, for the fluid volume discharged from all wells that have so far been pumped by this method has increased very materially, while the gas output has not been changed to a noticeable degree.

If the well does make an excessive amount of gas it has been found that the pump can become "gas-locked" and to prevent this it was found necessary to produce the gas between the tubing and the casing and through the casing head connections and prevent it from entering the pump at all. This can be done if the fluid level outside of the pump is properly regulated for the gas will take the path of least resistance while the fluid will be taken into the pump and discharged through the tubing, with only a small amount of gas accompanying it.



Coil of electric cable used with the submergible electric oil pump and surface connections at a pumping well.

There is reproduced with this article a production curve of one well in which this pump was first installed March 31, 1929, and still operating in a most satisfactory manner.

This well came in for an initial production of about 2,500 bbls. of oil without water, but after being put on the beam started to make some water. The beam pumping was principally for the purpose of agitating the well for the stroke was 6 feet long and at the rate of 35 strokes per minute in 3-inch tubing.

The centrifugal pump was first placed at a depth of 1,690 feet below the surface in a well having a total depth of 3,020 feet and immediately increased the production to about 2,450 bbls. of oil and 600 bbls. of water.

The well gradually decreased its rate of production until about June 7 when the pump was pulled, because the conduit had failed. This failure was due to the hydrostatic pressure on this flat conduit surface which had crushed the three electric wires together and caused a short circuit.

Increased Production

This condition was repaired and the pump again installed July 15 and has been running quite steadily ever since. The oil production has been such that the pump has now produced approximately 112,000 bbls. more oil than could probably have been produced in the total life of the well under other methods of production.

This well is one of the type that makes an ever increasing amount of water and if it cannot be removed from the well rapidly the amount of oil recoverable will decline to a point where it is no longer profitable to produce.

It will be noted that the amount of back pressure that was held on this well has gradually been reduced from about 400 pounds to practically atmospheric at the present time.

The whole performance of this pump has been quite satisfactory to the production company using it, and while it has been necessary to pull the outfit six times during the period of its use it has been found that about 92 per cent of the trouble was due to failure of the conduit at the bottom of the well and this trouble is being remedied so that it is anticipated that the future runs will exceed the 66-day period that is now the record time that the pump has been in the well without pulling.

The cost of power for operating this pump is about $12 per day and it is estimated that to handle the same quantity of fluid by the gas or air lift would require from $60 to $75 worth of power.

The installation cost of the pump complete is about one-third that of the plant necessary for gas lift pumping. These features make this type of installation most attractive, and further, the pump, motor and all accessory equipment is easily handled to and from the well.

The smaller pump is built to work against hydrostatic pressures that will be developed in 4,000-foot wells and the larger pumps will be made suitable for 6,500-foot wells and perhaps a little deeper, but they must be placed in not less than 9-inch holes.

The pump for 6¼-inch wells requires 465 volts of 3-phase, 60-cycle current at 70 amperes, and it is planned to use approximately 1,000-volt current for the larger pumps. It has been found desirable to install this type of pump only in wells where the electric current delivered is not subjected to wide fluctuations due to overloading at other places along the power line, for if the required current is not available at the motor of the pump the outfit will slow down and give trouble.

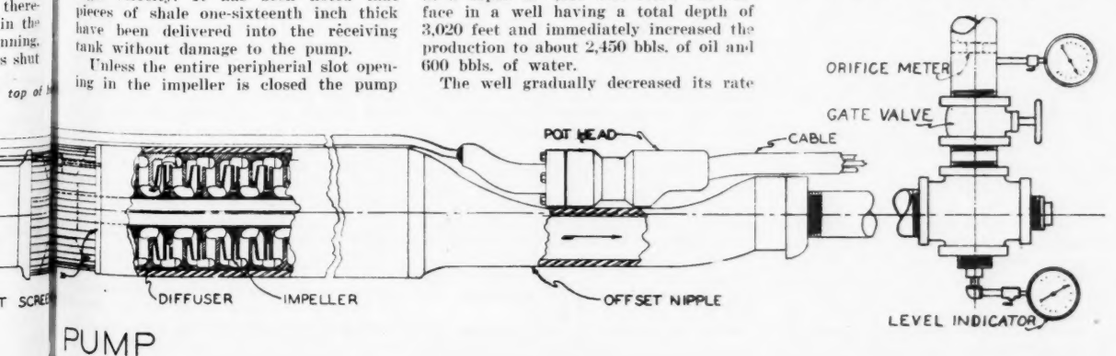
Production Curve

While only one production curve has been reproduced herewith it is typical of the work of this centrifugal pump at all wells where it has been tried in the Mid-Continent district and they have been used in the Seminole area, and near Ponca City, and in the Burbank Field, Oklahoma, also in several Kansas fields.

A company is now being organized to manufacture the pumps in sufficient quantity to meet the demand.

As now built the pumps are best adapted to use in wells that produce a large quantity of fluid, oil and water combined, but it is later planned to design pumps for smaller wells along the same general principles and this will permit a large field of application to be covered.

Submergible electric oil pump of the centrifugal type.



PUMP

Claims of Manufacturers

The manufacturers make a number of claims for this type equipment, some of them being stated below:

1. It will handle more fluid per unit of power installed than any other known type of pumping equipment.

(Continued on Page 106)

Crude Situation in the Permian Basin

Continuance and Extension of Proration Agreements in the West Texas Districts. Present Storage in the Fields

By L. E. Bredberg

FORT WORTH, Tex., Jan. 6.—For the past 2½ years the dark cloud of overproduction has been hovering on the horizon of the oil industry, casting its ominous shadow over the producing areas and threatening to bring on a deluge of price cutting, in some areas the price sinking below the price of water, which had to be hauled by tank cars from sources many miles distant for field and oil town supply. West Texas sulphur crude which was demanding the price of 80 cents below 26 gravity, with a 5-cent spread in September, 1926, sank to a flat price of 60 cents in August, 1927, when Winkler County became a threat to overproduction. This price was maintained until July, 1928, when it was given a small increase of 5 cents. This covered production from Crane, Upton, Crockett, Pecos and Winkler Counties, the main producing areas of West Texas at that time. In May, 1929, the really great boon was given to West Texas producers when 70 cents was announced for 26 gravity oil, with a 4-cent spread, raising 36 gravity and above to $1.18, bolstering up the feelings of the producers who had supplied the market for so long with such a low-priced commodity.

It was then the topic of general conversation that the sulphur crude of this district was the ruination of refineries, due to its corrosive contents, therefore many of the companies hesitated purchasing the crude for refining purposes, but it was discovered that this oil also contained high antiknock content and consequently was valuable from that standpoint. Nevertheless, sweet oil, most of it of higher gravity than the Permian basin crude, continued to be the most popular of the two and was in greater demand, affecting the sale of the latter to where it seemed to be rather a drug on the market.

Ten Trunk Lines Built

Regardless of the fact that there seemed to be too much production and that refineries were running to capacity, and that this oil would have no sale, pipe line companies inaugurated a building campaign in this great district until at the present time there have been 10 trunk lines built to accommodate the district, most of them running directly to terminals on the Gulf Coast. The total capacity of these 10 lines is in the neighborhood of 400,000 bbls. per day, and the total mileage of main right of way is approximately 3,600 miles, accommodating practically every pool in West Texas and two of the lines drawing from production in the southeastern corner of New Mexico, at present a most interesting area to the industry where several good producers have been completed. For the past four weeks the total daily average runs by these 10 lines has been better than 315,000 bbls., one line carrying an average of better than 35,000 bbls. daily to a terminal station and refinery in Oklahoma, while one other line has been transporting an average of around 6,800 bbls. to refineries in El Paso, Tex. The rest of the lines terminate at the Gulf Coast, much of the oil being loaded on ocean-going tankers for eastern refineries.

Only about 18,500 bbls. daily is moved in tank cars from the district. Millions of barrels of storage have been erected in the various fields to help take care of production, the largest of these tank farms being located near Midland, Tex., where crude comes from Winkler, Ward, Crane, Upton and Pecos Counties, and is later transported to the East and South. The Gulf Production Co., Atlantic Oil Producing Co. and Magnolia Petroleum Co. own the three large tank farms there.

E. E. Andrews, proration umpire of the Howard-Glasscock County Pools.

Near the towns of Pyote, Wickett and Monahans there are other large tank farms which have helped solve the situation of handling the crude. The Shell Petroleum Corp. has one earthen storage tank which accommodates a million barrels of Winkler County crude, and at McCamey has another such earthen tank, holding more than 1,000,000 bbls. McCamey has several tank farms owned by the various companies, and five of the trunk lines converge at this town in Upton County where the McCamey Field is located. It was one of the first large pools of West Texas, but has declined to a daily average of around 8,500 bbls. at present. Crane County, to the north, also has several large tank farms, which accommodated the crude from the Church, Fields and McElroy Pools, while the tanks at McCamey hold Winkler, Crane, Pecos and Ward County oil.

Howard and Glasscock Counties

Howard and Glasscock Counties have never had much steel storage erected due to the fact that the fields in these counties were drilled up gradually and the pipe lines and refineries serving this area called for practically all of the production. However, during the past year the Cosden Oil Co., Inc., erected a large tank farm near its refinery just east of the town of Big Spring. The Magnolia Petroleum Corp. has had a farm near ,Iaatan to which most of its production from Howard County has been run, and the Continental Oil Co. has always had considerable steel storage in the Chalk Field. Seven pipe line companies serve Howard and Glasscock Counties at present. The Shell Pipe Line Co., Humble Pipe Line Co. and Cosden Pipe Line Co. are the main purchasers in this area and are running the majority of the oil from these fields. Magnolia Pipe Line Co. runs practically only its own production and the Col-Tex Pipe Line Co. draws about 5,000 bbls. daily for its refinery at Colorado City. The Big Spring Refining Co.'s line and Great Western Pipe Line Co. run oil for their respective refineries in Big Spring. The Cosden Pipe Line Co. runs crude from the fields to the Cosden and Richardson refinery at Big Spring. The latter refinery is owned and operated by Cosden.

The daily average production which has been allowed by the proration committee of Howard and Glasscock fields for the month of January, 1930, 28,220 bbls., is an amount which has eliminated these fields from the class which might threaten overproduction, for they have been well stabilized by co-operation of the operators and companies owning production in these areas.

Proration Continued

In October representatives of these producers met at Fort Worth and were unanimous in voicing their opinion for the continuance of proration in these fields. At the same time several representatives spoke for cutting the price of the crude produced in the western extension due to the fact that this crude was bringing a higher price because of the higher gravity, although it had a lower gasoline content. The pipe line companies were not willing to connect with all of the completed wells on the west side of the field, whereas they were taking all of the lower gravity oil they could buy from operators on the eastern side of the fields, for this oil had a higher gasoline content and sold at a lower rate than the other crude. This idea seemed to meet with the approval of all present and shortly after the meeting the main purchasers in these fields posted a new set of prices which helped to stabilize the pipe line situation, and brought succor to those wells needing connections on the western side, and also to the wells in the extension over in Glasscock County which was opened by the Kirby Oil Co. and Lion Oil & Refining Co. The continuance of proration and change in prices of the crude in these fields helps to bear out the belief that operators in West Texas have co-operated to the greatest extent in making this district one of the best, if not the best, prorated and curtailed regions in the United States, helping to prevent overproduction. The present potential of the Howard-Glasscock County fields is 57,600 bbls. daily, the proration committee cutting the daily allowance to about half of that amount.

Hendricks Pool

The Hendricks Pool, Winkler County, was the first field to be put under proration in West Texas, the field being divided into 40-acre units, with a daily average of 150,000 bbls. allowed, this amount changing to 175,000 bbls. at one time, but is now back to the first allotted amount. The allowable production for acreage for the last period, from December 15, 1929, to January 1, 1930, was 75,057 bbls., and the allowable for potential was 74,992 bbls. Potential production was 165,865 bbls. from 564 wells on 273 units. Due to water encroachment and gradual decline of the wells the potential has decreased to but a semblance of its former amount, and, whereas the field was one of the greatest overproduction threats in the United States, it is far removed from such a status now. Many of the units are incapable of making their acreage allowance and many leases are unable to make acreage allowance, many of the wells, similar to some of those in the Howard-Glasscock County fields, being unable to make their daily allowance. The gradual decline of this pool has brought production down to such a level as to cause many thousands of barrels of crude to be drawn daily from storage in West Texas over the past several months, with but few weeks in

(Continued on Page 138)

OKLAHOMA CITY FIELD IS ONE OF GREAT ACHIEVEMENT AND PROMISE

By W. A. Spinney

The map on the opposite page shows the producing wells, drilling wells and locations in the Oklahoma City Pool as of December 31, 1929. The well marked with a large circle is the discovery well, which was completed in December, 1928. It was drilled by the Indian Territory Illuminating Oil Co. and opened what is considered by many to be the greatest producing field in ,Oklahoma. It has yielded the largest producing wells yet found in the State. It has produced approximately 8,818,000 bbls. from the time it was discovered to December 31, 1929.

The field was located by geologists early in 1928 and a test well started which was nearly a year in drilling. The pool is located a short distance south and east of Oklahoma City.

With the passing of each week since the middle of last summer enormous producing wells have been found. It was soon apparent this pool would dwarf all others.

The pool increased its oil production at such a rapid rate that a curtailment program was necessary. For the first time in oil history a pool making high gravity crude was completely shut in for a month in the first year it was producing. The Oklahoma City Pool was shut in from October 12 to November 12. It removed approximately 72,000 bbls. daily from the market. The co-operation among the operators in the pool was an important factor in stabilizing the crude oil market at that time.

The pipe line facilities were inadequate to handle all the oil produced. The first year the pool reached an estimated potential of 435,000 bbls. while the pipe line companies were only equipped to handle approximately 166,000 bbls. daily, including the tank car shipments.

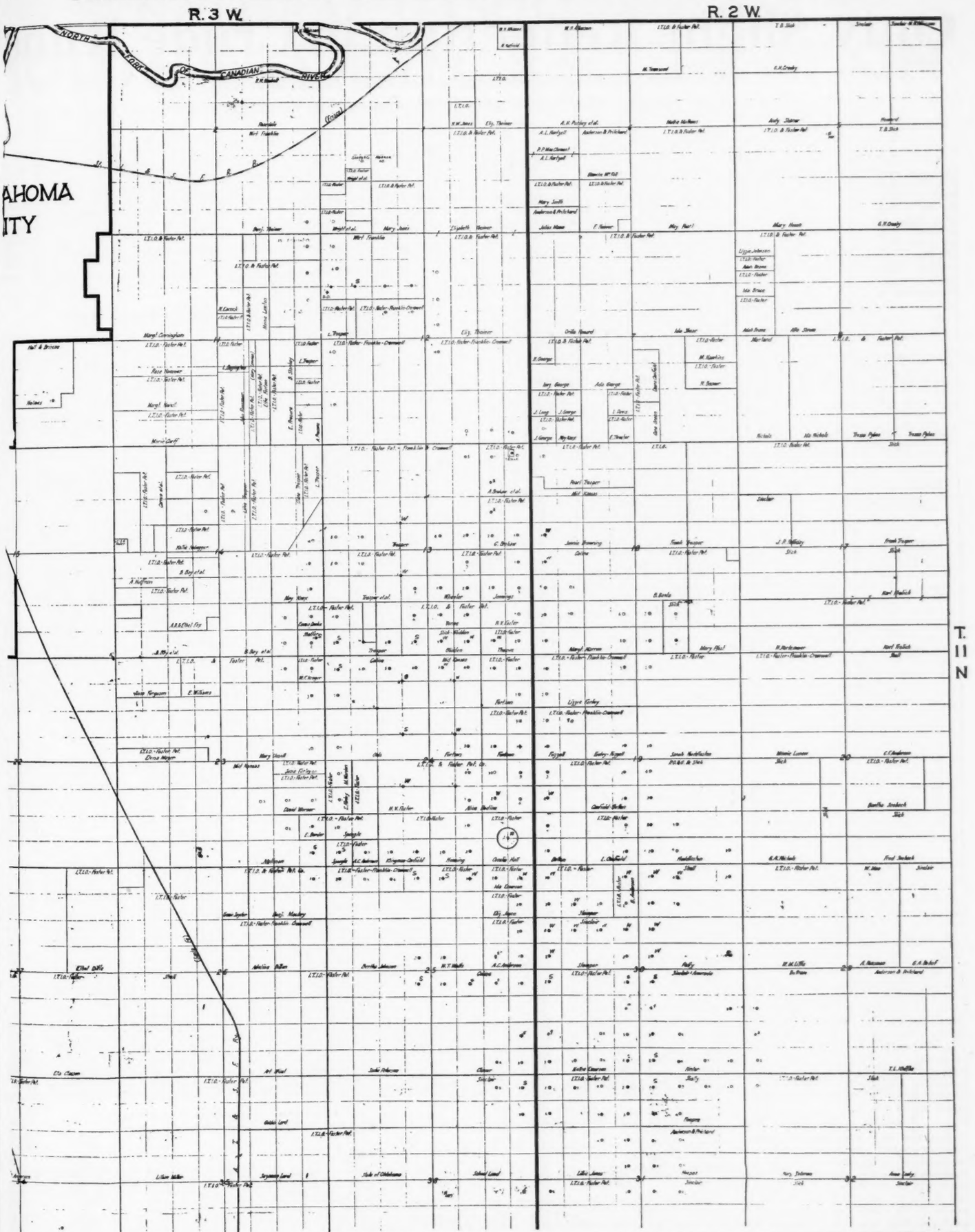
The oil production in the pool is found in two formations, the Arbuckle lime and the Detrital sand. Where the two formations join is still a matter of guess work. The contact between the Detrital sand and the Simpson sand is indistinguishable where the Detrital rests on the slope of the Simpson formation. For this reason it is best to consider it as one section.

The discovery well in the pool found its production in the Arbuckle lime, which has yielded the largest wells in the pool. The largest well in Oklahoma was found in the Oklahoma City Pool. It was drilled by the Indian Territory Illuminating Oil Co. in the SW cor. SE SE, Section 13-11-3w, and made 45,-557 bbls. the first 24 hours.

The Detrital sand horizon was discovered by the Coline Oil Co. in its No.

(Continued on Page 138)

PRODUCTIVE AREA OF THE OKLAHOMA CITY FIELD IN OKLAHOMA



In this map of the Oklahoma City Field the discovery well is indicated by a circle. The wells producing from the Detrital or sand zone are marked S. All the other producing wells are producing from the Arbuckle lime. The wells that are making water with the oil are marked with a letter W. None of the wells in the Detrital sand has shown indications of water. This field produced approximately 8,818,000 bbls. from December 4, 1928, to December 31, 1929, and will greatly exceed this in 1930 unless kept under the severest curtailment.

Only Slight Reduction in Crude Runs

Refinery Operations Maintained at High Rate Despite Low Prices. Belief Most Plants Operating at Loss

By W. T. Ziegenhain

Mid-Continent refinery crude runs will show only a slight reduction in January, according to the respective schedules outlined early in the month. The total for the Mid-Continent is shown as 535,460 bbls. daily with the Arkansas refinery section showing an increase of 1,750 bbls., the north central Texas area an increase of 1,670 bbls., but with reductions shown in West Texas, Oklahoma, Kansas and north Louisiana. The net change shows a reduction of 5,170 bbls. when compared with the average of the December runs.

The continuation of the relatively high rate of refinery operations has aggravated the gasoline market situation and prices have declined generally as a result. In scattered instances where distress material is offered, the price has been lowered to 6 cents, Group 3. Apparently certain refiners are attempting to rectify the situation by curtailing operations and some of them have materially reduced their runs but these reductions have been

RUNS TO STILLS AT MID-CONTINENT REFINERIES

1928	
January 1	415,125
February 1	418,275
March 1	427,145
April 1	451,225
May 1	479,225
June 1	487,135
July 1	506,310
August 1	543,625
September 1	563,270
October 1	547,820
November 1	550,000
December 1	520,000
1929	
January 1	508,550
February 1	505,800
March 1	514,950
April 1	530,530
May 1	577,500
June 1	585,030
July 1	565,800
August 1	555,250
September 1	552,300
October 1	544,720
November 1	545,473
December 1	540,630
1930	
January 1	535,460

equalized by increases in other plants. There has been no effective curtailment movement evolved yet, despite the general acceptance of the belief that most plants are now being operated at a loss.

Some refiners have curtailed their cracking operations with the view of decreasing their gasoline production. They are storing their residuum as cracking stock to be run at some future date when the gasoline market is in better shape. This relieves them from a gasoline storage program but the residuum in storage is potential gasoline and the scheme calls for shutting down the most profitable part of the plant at present. Most refiners contend this is not the solution of the problem.

Compared to Year Ago

Compared to a year ago, the present runs are 27,000 bbls. higher or approximately 6 per cent more. This does not seem excessive but the true weight of the effect of the increased operations is not shown by this figure because the increase in the volume of cracked gasoline produced from month to month has been greater than the increase in the straight-run gasoline. As an example, the following figures which apply to Oklahoma and Kansas may be cited.

In November a year ago 3,038,000 bbls. of straightrun gasoline were produced and 1,716,000 bbls. of cracked gasoline. This year, during the same month, 3,110,000 bbls. of straightrun gasoline were made while 1,795,000 bbls. of cracked gasoline were produced., The increase in the volume of straightrun gasoline amounts to 72,000 bbls. and is reflected in the increased crude runs but the effect of increased cracking, which caused an increase in the production by 79,000 bbls., might go unnoticed. From the standpoint of marketing gasoline, the operations may be said to be more than double the 6 per cent suggested by the difference in the crude runs alone.

Oklahoma

Crude runs in the Oklahoma refineries will be decreased 2,450 bbls. in January with no changes in the status of the number of operating and shutdown plants. In the list of plants, there have been several instances where the runs are being cut from 500 to 1,500 bbls. The Independent Oil & Gas Co. shows the largest reduction as the runs at the Okmulgee plant are being decreased from 5,000 bbls. to 3,500 bbls. But these reductions, taken collectively, are nearly equalized by increases in a few other plants. The great majority of the plants in Oklahoma show no change in their operations, and the result is that little change is shown for the State. Construction work is being restricted principally to maintenance work and no major changes or additions are under way.

North Central Texas

North Central Texas refiners will run slightly more crude in January than December with one plant shutting down and one resuming operations. Scattered throughout the list are several plants in which the crude runs have been reduced from a few hundred barrels to 1,000 bbls. per day, but offsetting these reductions are substantial increases in several other plants. The increase amounts to only 1,670 bbls. and may be accounted for principally by the resumption of operations in the Taxman Refining Co.'s plant at Wichita Falls, Tex. The only other change was in the shutting down of the Tarrant Refining Co.'s plant at Grand Prairie.

West Texas

West Texas plants showed the greatest reduction in the crude runs for January. The runs in this area will be reduced to 70,710 bbls. during the month, approximately 5,000 bbls. under the December schedule. There was no change in the status of the list of shutdown plants. On the first of the month the Humble Oil & Refining Co. was not operating its McCamey plant but will resume operations later in the month and expects to run a quantity of crude equivalent to 8,000 bbls. per day over the entire month.

Kansas

There was very little change in the operations of the Kansas refineries except the resumption of operations in the Barnsdall Refineries, Inc.'s plant at Wichita. This plant will run only 1,500 bbls. per day and the reduction of the runs in the other plants overcomes this increase and the total runs will be 89,300 bbls. per day or 1,000 bbls. below the December schedule.

Arkansas

Arkansas refinery runs have been increased slightly and the average daily schedule for all plants will be 1,750 bbls. higher in January. The increase was brought about principally by the starting up of the Houston Oil Co.'s plant at Camden. This plant has been idle for several months while changes were made in the equipment. It will run approximately 1,800 bbls. as the schedule for the month. The only other major change in the operations for the State was the shutting down of the James B. Berry & Sons Co.'s plant at Hosston. This plant has been manufacturing asphalt as one of its major products and the suspension is temporary and operations are expected to be resumed as the demand for that product improves with the coming of warmer weather.

North Louisiana

Practically no change is shown in the operations of the north Louisiana refineries. The crude schedule for the month will be maintained within a few hundred barrels of that maintained during December as the market has been supported in this territory better than in some others, due to new export orders.

MID-CONTINENT REFINERY OPERATIONS

(Based on operations January 1, 1930, and December 1, 1929)

District—	No. plants	Daily crude cap (Bbls.)	Daily crack cap (Bbls.)	Plants oper. Jan. 1	Runs to stills Jan. 1	Plants oper. Dec. 1	Runs to stills Dec. 1	Daily decr. Jan. 1
Arkansas	9	44,800	13,150	9	30,650	8	28,900	*1,750
Kansas	16	132,000	73,850	15	89,300	14	90,300	1,000
North Louisiana	6	58,700	23,500	6	39,800	6	40,000	200
Oklahoma	46	310,800	116,750	41	198,300	41	200,750	2,450
North and central Texas	36	166,700	25,000	34	106,700	34	105,030	*1,670
West Texas	28	142,000	53,850	27	70,710	27	75,650	4,940
Total	141	856,000	306,100	132	535,460	130	540,630	5,170

*Increase.

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year)

Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Anderson-Prichard Oil Co., Cyril	4,000	4,000	4,000
Barnsdall Refineries, Inc., Barnsdall	6,000	4,000	4,000
Barnsdall Refineries, Inc., Okmulgee	10,000	3,500	4,000
Bell Oil & Gas Co., Grandfield	4,500	1,500	2,000
Champlin Refining Co., Enid	16,000	9,000	9,000
Citizens Refining Co., Seminole	1,000	100	100
Continental Oil Co., Sapulpa	10,000	2,000	2,000
Continental Oil Co., Ponca City	30,000	13,000	13,200
Cushing Refining & Gasoline Co., Blackwell	1,800	1,300	1,000
Cushing Refining & Gasoline Co., Cushing	3,500	2,000	2,000
Eason Oil Co., Enid	5,000	3,000	3,000
Empire Oil & Refining Co., Cushing	5,000	4,700	4,700
Empire Oil & Refining Co., Okmulgee	4,000	4,000	4,000
Empire Oil & Refining Co., Ponca City	7,500	7,500	7,500
Garber Refineries, Inc., Garber	3,500	2,800	3,000
Gilmer Oil Co., Ringling	3,000	(*)	(*)
Globe Oil & Refining Co., Blackwell	7,500	7,000	7,000
Globe Oil & Refining Co., Cushing	15,000	11,000	12,000
Homaokla Oil Co., Allen	3,000	(*)	(*)
Illinois Oil Co., Cushing	3,000	(*)	(*)
Imperial Refining Co., Ardmore	5,000	2,900	2,900
Independent Oil & Gas Co., Okmulgee	5,000	3,500	5,000
Johnson Oil Refining Co., Cleveland	6,000	5,000	5,200
Mid-Continent Petroleum Corp., West Tulsa	40,000	22,000	22,000
Northwestern Refining Co., Tonkawa	3,000	3,000	2,200
Peppers Gasoline Co., Covington	1,000	700	700
Pierce Oil Corp., Sand Springs	8,000	7,000	7,000
Producers Oil Co., Bristow	2,500	1,500	1,500
Producers & Refiners Corp., West Tulsa	6,000	3,500	3,500
Pure Oil Co., Ardmore	5,000	2,000	2,300
Pure Oil Co., Muskogee	9,000	7,000	8,000
Remington Oil Co., Wewoka	2,000	(*)	(*)
Rock Island Refining Co., Beckett	2,500	2,000	2,000
Shaffer Oil & Refining Co., Cushing	10,000	10,000	10,000
Sun Oil Co., Yale	5,000	4,900	4,900
Sinclair Refining Co., Muskogee	1,000	500	300
The Texas Company, West Tulsa	15,000	15,000	15,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	(*)	(*)
Tidal Refining Co., Drumright	11,000	10,000	10,000
Transcontinental Oil Co., Boynton	2,500	2,000	1,700
Transcontinental Oil Co., Bristow	5,000	3,500	2,500
Western Oil Corp., Beckett	2,000	1,500	1,500
White Oak Refining Co., Allen	8,000	6,000	5,200
Wilcox Oil & Gas Co., Bristow	5,000	1,300	2,000
Wirt Franklin Petroleum Corp., Ardmore	4,000	2,300	1,950
Yale Oil Corp., Yale	1,500	800	900
Total	310,800	198,300	200,750

*Shut down.

REFINERY OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year)

Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Bayou State Refining Co., Hosston	700	500	500
Crystal Oil Refining Corp., Shreveport	14,000	5,000	4,500
Dixie Oil Co., Superior	3,000	3,100	3,600
Louisiana Oil Refining Co., Shreveport, Bossier	24,000	15,700	17,000
Shreveport, El Dorado Pipe Line Co., Shreveport	10,000	9,000	9,300
The Texas Company, Shreveport	7,000	6,500	6,000
Total	58,700	39,300	40,000

REFINERY OPERATIONS IN ARKANSAS

(Plants which have been in operation during the past year)

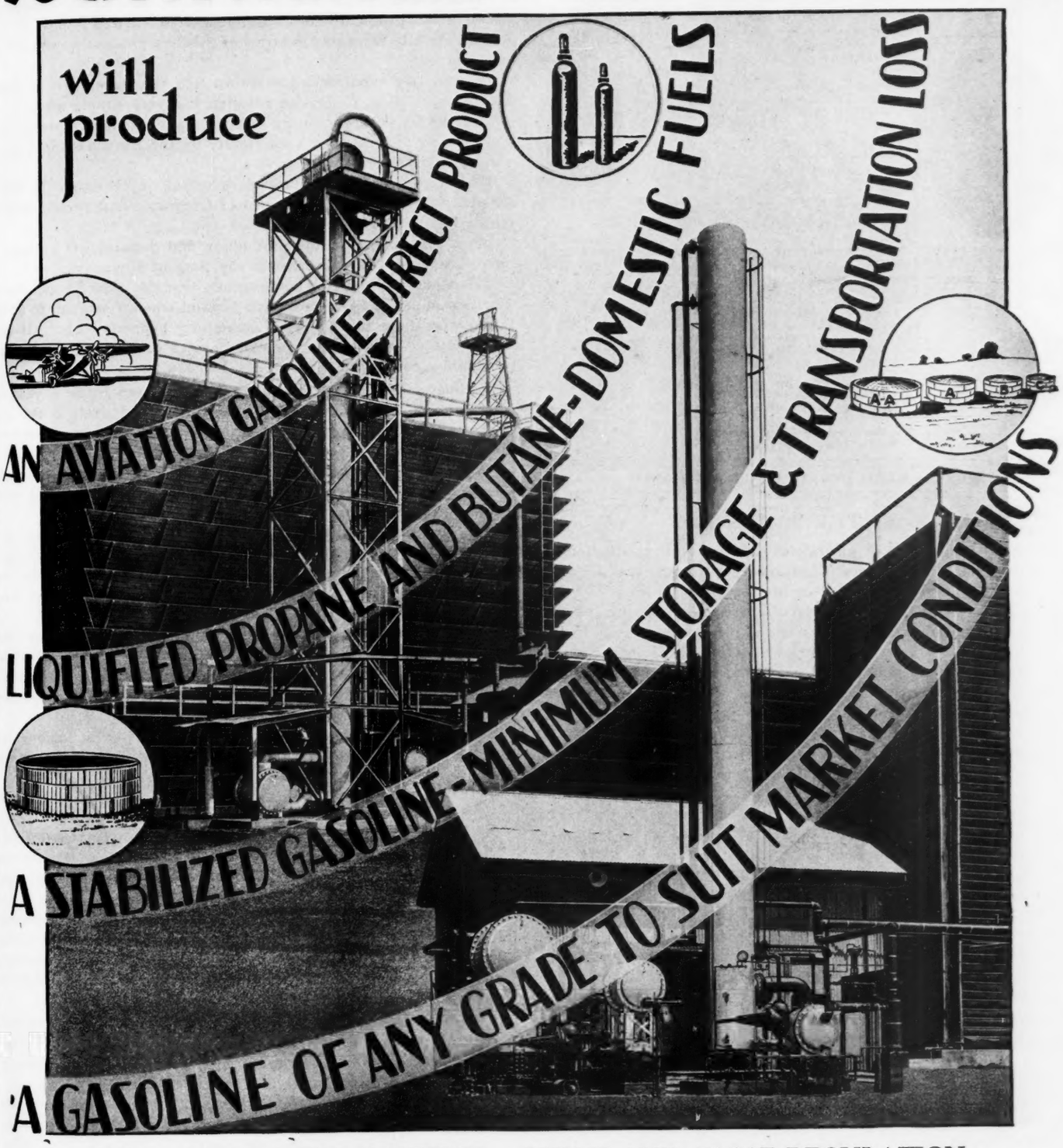
Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
James B. Berry & Sons Co., Waterloo	2,000	(*)	500
Henry H. Cross Co., Smackover	6,000	5,100	5,100
Houston Oil Co., Camden	3,000	1,800	(*)
Kettle Creek Refining Co., Pearson	5,000	2,600	2,600
Lion Oil & Refining Co., El Dorado	12,000	8,000	8,000
Macmillan Petroleum Products Co., El Dorado	1,800	1,550	1,550
Ouachita Valley Refining Co., El Dorado	2,000	800	850
Root Refining Co., El Dorado	10,000	8,100	8,000
Simms Oil Co., Smackover	3,000	2,700	2,300
Total	44,800	30,650	28,900

*Shut down.

(Continued on Page 137)

NATURAL GASOLINE *plus*...

SOUTHWESTERN RECTIFICATION


will produce
AN AVIATION GASOLINE-DIRECT PRODUCT
LIQUIFIED PROPANE AND BUTANE-DOMESTIC FUELS
A STABILIZED GASOLINE-MINIMUM STORAGE & TRANSPORTATION LOSS
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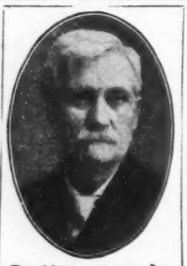

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MEMBER AUDIT BUREAU OF CIRCULATIONS

ALL IN THE SAME BOAT

With all the talk about curtailment of crude oil production in line with demand the industry is apt to forget that the real problem is to keep the supply of gasoline in line with consumption.

The Bureau of Mines figures for the first eleven months of the past year, just made public, illustrate this very plainly.

While the available crude oil supply is the basis for any curtailment program and the foundation of a sound economic condition in the oil business there are several other sources of motor fuel to be taken into consideration.

For example, in the first eleven months of the year we produced 130,128,000 barrels of gasoline by cracking fuel and gas oils.

This was 33 per cent of the total available supply from the refineries.

It compares with 111,438,000 barrels from cracking in the same period in 1928, an increase of 26 per cent.

Then we have natural gasoline, of which we produced in the first eleven months of the year some 2,008,200,000 gallons against 1,599,100,000 gallons in the similar period of the previous year.

This also was a gain of almost 26 per cent, and supplied 11 per cent of our motor fuel.

Contrast this with our production of straightrun gasoline from crude, which amounted to but 225,510,000 barrels, an increase of 26,263,000 barrels, or only 13.2 per cent.

In other words, production of motor fuel from other sources than crude oil increased 26 per cent or almost twice as much as the gain in production of straightrun gasoline from crude oil which was but 13.2 per cent.

This shows that we are constantly requiring less crude to obtain the same amount of gasoline formerly obtained from crude alone.

Thus, during the first eleven months of the year, there was a recovery of 43.78 per cent of gasoline for every barrel of crude oil put through the refineries, compared with a recovery of 41.14 per cent in the same period the previous year, an increase in recovery of 2.64 per cent, including natural gasoline used at refineries.

With only the same recovery as in 1928, instead of running 907,000,000 barrels of crude to stills in the first eleven months of 1929 we should have had to run 965,000,000 barrels.

We were able to supply the same amount of gasoline with 58,000,000 barrels less crude because of the efficiency of the refining industry in cracking gas and fuel oils and the manufacture of natural gasoline from wet gas.

Those 58,000,000 barrels of crude that were not run to stills represented 160,000 barrels a day less production needed during the first eleven months of 1929.

These are facts that must be taken into account in any consideration of crude production or curtailment, which after all must, in the last analysis, be measured in terms of gasoline production and motor fuel demand.

Fortunately experience has shown that the calculation of these factors, even 60 or 90 days in advance, is a very simple matter.

The ability of the industry to make such a gauge of production and demand is illustrated very clearly by the Bureau of Mines report for November.

This report shows the largest reduction in crude stocks since August, 1925, 4,000,000 barrels east of California and 800,000 barrels on the Pacific Coast.

As a consequence crude production and demand were approximately in line with each other at the close of November.

There can no longer be any question that the industry can stabilize its production in balance with demand when it sets out to do it. It does not have to wait until something happens to act. It can figure out what the situation will be at a certain date and make provision accordingly.

Estimates of gasoline consumption have been made a year in advance with a variance of only a few thousand barrels at the end of the year. Even in the past year when conditions were unusual the estimates were conservative.

Consumption can be plotted month by month for a year in advance. It is then only a matter of keeping production level with the estimated demand.

The November figures prove conclusively that the industry can do it, the more remarkable because there was no national program, each of the oil-producing states dealing only with its own situation, yet the result was a perfect balance between output and consumption.

To attain this outcome, however, it was necessary to consider every factor, not merely the production of crude but the production of gasoline by cracking, straightrun or natural gasoline manufacture. The omission of any one of these factors would throw the whole calculation astray.

The whole situation is an impressive object lesson in the oneness of the industry, the absolute interdependence of each and every branch.

It is a crushing answer to those who persist in thinking of their own division as the only one to be taken care of.

With manufacturing efficiency getting along with 160,000 barrels of crude a day less and the percentage of gasoline recovery per barrel of crude steadily increasing year after year the production of crude must be gauged constantly with that factor in mind.

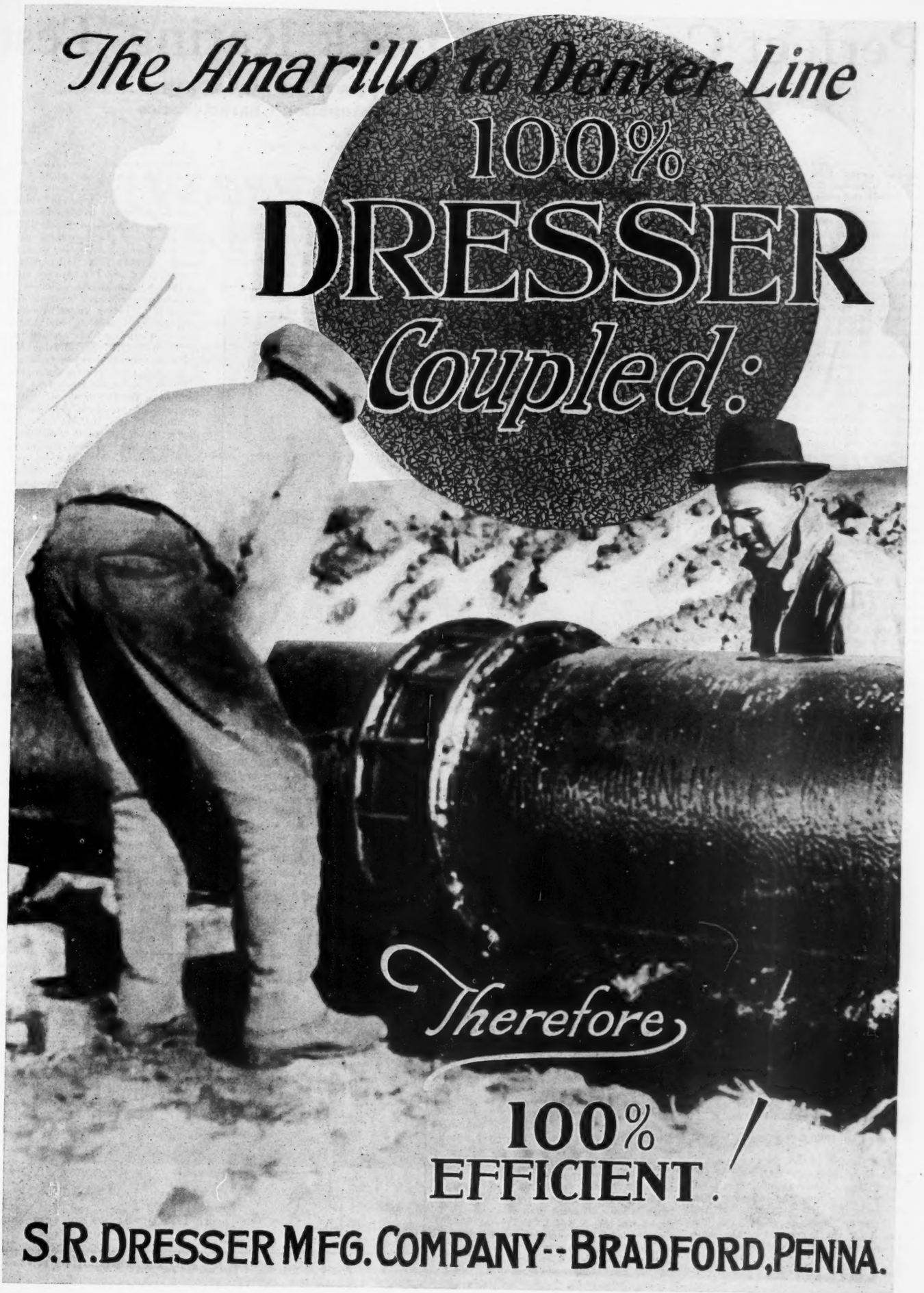
Gasoline is the main revenue-producing product of the industry and is being produced with proportionately less crude owing to the availability of fuel and gas oils as raw material and the increasing production of the natural gasoline industry which already supplies 11 per cent of our motor fuel requirements.

The situation in regard to fuel oil and gas oil is further affected by the fact that there are two markets for these products which are not only sources of raw material for the manufacture of motor fuel but are in demand for various types of heating.

The crude producers have brought their production into line with the present demand. They have proved that it is possible to arrange their operations to this end months in advance. The refining division has exactly the same information at hand and can make similar provisions for the future of the market if it will.

Upon whether it does or not during the present winter will depend the condition of the industry during the coming summer. Just as it has been shown that every division of the industry is in the same boat every individual and unit is bound to be affected by the actions of every other one.

The man who overproduces crude or gasoline is simply cutting a rod for his own whipping.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Perfect Certified Knock Rating Test

University of Michigan After Several Years of Investigation Standardizes on Method of Determining Detonation Characteristics

By George Granger Brown and Harry E. Zuck
Department of Engineering Research, University of Michigan, Ann Arbor

At the present time the knocking tendency of a motor fuel determines to a large extent the commercial value of the product. Unfortunately, there is no standard method for determining the knocking tendency of different fuels, nor any standard method for reporting such a property even when determined. Different companies and laboratories have adopted their own methods for expressing the knock rating of fuels based on the various methods of test which have proven satisfactory in the different laboratories. Although satisfactory from the standpoint of the individual laboratory, this practice leads to confusion when attempting to purchase motor fuel on knock rating specifications.

For the past two years increasing quantities of motor fuel have been purchased on specified knock ratings as determined in the engineering research laboratories of the University of Michigan. These knock ratings have been expressed in terms of the conventional "benzol value," which is defined as the per cent by volume of pure benzene (C_6H_6) that must be blended with straightrun Pennsylvania motor fuel to make a product having the same knocking tendency as the fuel under test.

Although these tests were conducted under uniform conditions, carefully selected to give results consistent with knock ratings determined by actual road tests on a number of representative motor cars, the fact that they were based upon an arbitrary and not readily reproducible sample of Pennsylvania motor fuel made correlation with other laboratories difficult. It has been recognized for some time that the only satisfactory solution to this difficulty would be found in the use of two pure compounds to determine the knock rating scale. Dr. Graham Edgar[1] deserves most credit for his efforts to supply the industry with such materials. His suggestion of the use of normal heptane (C_7H_{16}) as the standard for the lower end of the scale and iso-octane (tri-methyl-isobutyl methane or 2, 4, 4-tri-methyl-pentane) as the blending material to determine the increasing scale of knock ratings has been adopted by many laboratories, and is occasionally written into specifications for knock ratings. Similar blends of normal heptane with pure benzene (C_6H_6) are widely used in England and also in this country.

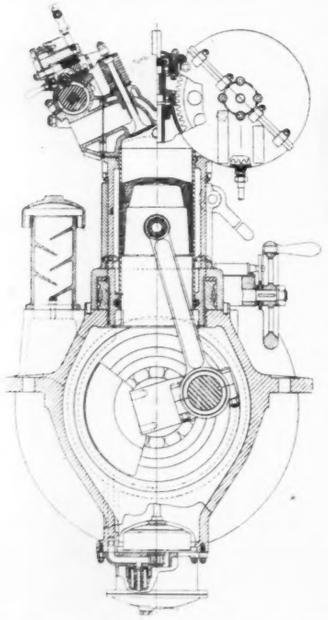

Figure 1—Section of Universal test engine.

The great differences in the physical and combustion characteristics of benzene and normal heptane make these two substances somewhat less satisfactory than iso-octane and heptane as primary standards. This is evident in the different specific gravities and particularly in the fact that the air-fuel ratio giving maximum knock varies from about 13 to 1 in the case of pure heptane to about 11 to 1 for a blend of 90 per cent benzol with 10 per cent heptane, while in the case of the iso-octane-heptane blends no marked changes in gravity are experienced and the air-fuel ratio giving maximum knock is practically constant. However, we have already received samples for test which show a higher knock rating than pure iso-octane. Since it is impossible to extrapolate knock ratings beyond 100 per cent iso-octane, this fact is an important limitation to the use of iso-octane as a primary standard.

Rating Method

Because of the obvious advantages in using a pure compound as the primary standard in determining the scale of knock ratings, all our tests are now reported in terms of relative compression ratio referred to pure normal heptane. In order that the results may be expressed in terms of pure compounds, the knock ratings are also reported in terms of blends of benzene in heptane, and iso-octane in heptane, which match the fuel being tested. Because of the common use of benzol value based on straightrun Pennsylvania motor fuel as standard, the results are also reported in terms of conventional "benzol value" as in the past.

Figure 4 gives the relationship between these different values as determined on the N.A.C.A. Universal Test Engine under the conditions outlined below. Although strictly applicable only to this engine and under these conditions, the relative compression ratio as indicated along the vertical ordinate at the left of the figure is approximately the same as would be indicated by road tests on representative water-cooled motor cars.

Type of Engine

Six years of experience with as many different single cylinder testing engines, including L-head, valve in head, water-cooled, air-cooled, and evaporative cooling systems have led to the following equipment and method as entirely satisfactory and reliable, although not by any means ideal.

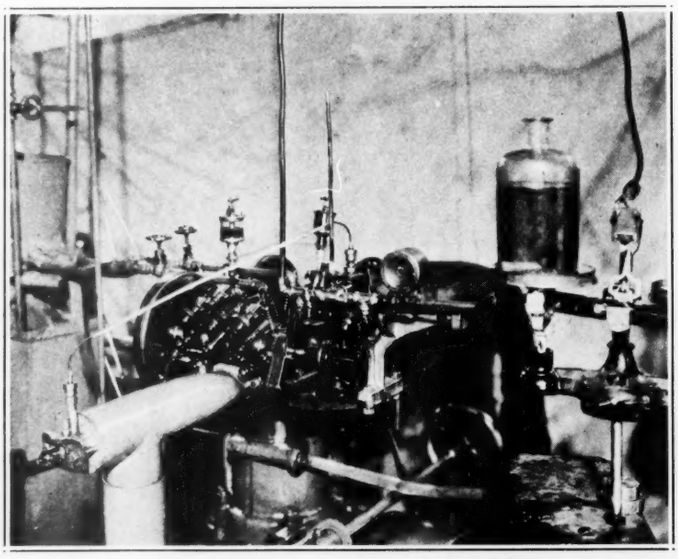

Figure 2—Universal test engine showing fuel pump mounting.

The single cylinder variable compression N.A.C.A. Universal Test Engine used in these tests was developed several years ago in the laboratory of the National Advisory Committee for Aeronautics. It has a 5-inch bore and 7-inch stroke and is equipped with an aluminum piston. These dimensions, although larger than necessary, offer an advantage in that the engine is less sensitive to slight changes in operating conditions. The variable compression feature is made possible by raising or lowering the entire cylinder wall and head which carries the two cam shafts, as indicated in the section Figure 1. In this manner the compression ratio may be varied from less than 3.5 to more than 14.0 to 1. At 900 R.P.M., at which the knock rating tests are made, this range in compression ratio is equivalent to a variation in compression pressures of from 65 to over 425 pounds per square inch gauge. In addition, the engine is also provided with means for varying independently the valve timing and lift through split cams on the two cam shafts. Since any or all of these changes may be made while the motor is operating under full load, it is adaptable not only to fuel testing, but also to a study of the change in engine cycles upon efficiency and knocking.

The compression ratios as indicated by a revolution counter on the worm which raises or lowers the head were calibrated by direct displacement of liquid. The compression pressures were carefully determined at 900 R.P.M. with this valve timing (exhaust opens —33° before bottom dead center; exhaust closes —8° after top dead center; intake opens —8° after top dead center; intake closes —25° after bottom dead center) by an Okill gauge and found to be accurately represented by the following expression:

Compression pressure in pounds per square inch gauge = 34.25 × compression ratio — 56.

Power Output

For controlling the speed and measuring the power output, the engine is coupled to a 50-horsepower electric cradle dynamometer of conventional design. Although all tests are made with the air-fuel ratio giving maximum knock, the air-fuel ratio is always determined by direct measurement as a check on the setting made for maximum knock.

The air is first drawn past a hygrometer for determining its humidity, then through a Venturi and into a large surge tank to absorb the pulsations of the engine so as to give a steady reading on the Venturi. From the surge chamber the air passes through an electric heater capable of heating the air to 300° F. and then into the mixing chamber leading to the engine.

Handling Fuel

The fuel handling system (Figures 2 and 3) has seen many changes during the past three years. The fuel under test is fed from a weighing bottle on scales which automatically start and stop both a total revolution counter and a stop watch while supplying to the engine a predetermined weight of fuel. Originally the fuel was sent from the weighing bot-

(Continued on Page 103)

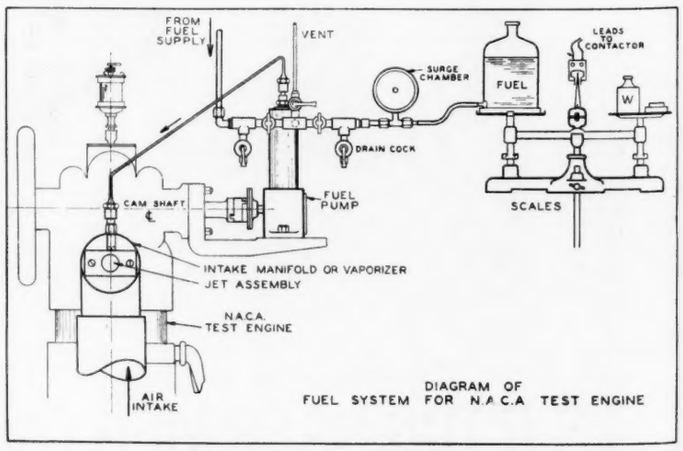

Figure 3—Diagram of fuel system for N.A.C.A. test engine.

[1] Industrial and Engineering Chemistry, Vol. 19, p. 145, January, 1927.

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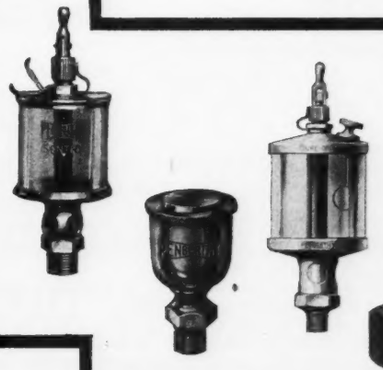
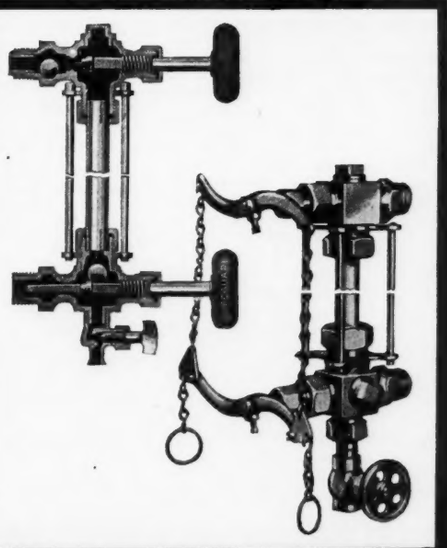
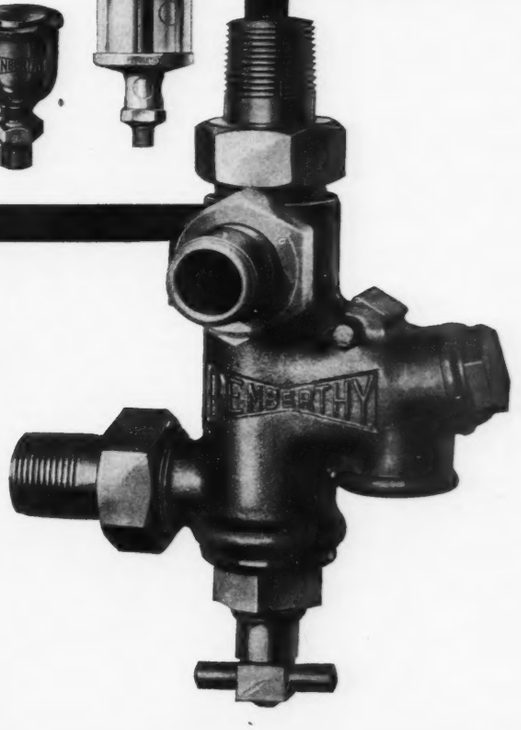


PENBERTHY PRODUCTS





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THE OIL MAN'S CALENDAR

January 4-11—New York, National Automobile Show, Grand Central Palace.

January 7-10—New York, meeting, American Railway Association. Subcommittee on Tank Car Specifications, 30 Vesey Street.

January 9—New York, meeting, American Petroleum Institute, Board of Directors, institute headquarters.

January 9—New York, annual dinner, Society of Automotive Engineers. Hotel Pennsylvania.

January 11-16—Atlantic City, N. J., convention and twenty-seventh annual Road Show, American Roadbuilders Association, Auditorium.

January 14—Miami, Fla., aeronautic meeting, Society of Automotive Engineers.

January 19-25—Chicago, National Oil Show, Hotel Sherman.

January 20-24—Detroit, Mich., annual meeting, Society of Automotive Engineers, Book-Cadillac Hotel.

January 22-24—Boston, Mass., Independent Oil Men's Association of New England, American House.

January 23-24—Oklahoma City, Okla., Oklahoma Oil Jobbers Association, Huckins Hotel.

January 25-February 1—Chicago, National Auto Show, Coliseum.

January 24 — Pittsburgh, Pa., annual meeting of Fire and Safety Marshals, National Petroleum Association, William Penn Hotel.

January 27-31—Philadelphia, International Heating and Ventilating Exposition, Commercial Museum.

January 28-29—Milwaukee, Wis., Wisconsin Petroleum Association, Hotel Pfister.

January 30-31—Baltimore, Md., A.S.T.M. Committee D-2 on Petroleum Products and Derivatives, Lord Baltimore Hotel.

February 11-12 — Des Moines, Iowa, Iowa Petroleum Association, Fort Des Moines Hotel.

February 19-21 — Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Warwick Hotel.

March 10-12—Shreveport, La., convention, Western Petroleum Refiners Association.

March 19-21—Detroit, convention, Michigan Oil Men's Association, Statler Hotel.

March 20-22—New Orleans, La., American Association of Petroleum Geologists, Roosevelt Hotel.

April 5—New York, 50th Anniversary Celebration, American Society of Mechanical Engineers.

April 5-13—Detroit, All American Aircraft Show.

April 7-12 — Chicago, annual meeting, American Oil Burner Association, Stevens Hotel.

KANSAS OIL MEN MEET IN WICHITA, JANUARY 10

Oil producers will meet in Wichita, Kans., Friday, January 10, to decide on the future of the conservation program in the State. Curtailment may be continued in the various flush pools in the State.

The committees on the Valley Center Pool and the Voshel Pool are expected to attend the meeting. Indications are now that the present proration plan may be extended in the Voshel Pool in spite of the new drilling campaign, which consists of about 18 new locations and makes a total of 43 drilling operations in the pool. The present proration plan expires February 15. The proration plan in the Valley Center Pool expires January 15. The production in this pool is owned by a number of individuals operating on many small tracts. It is likely the present proration plan now in effect may be continued. This pool is under a 50 per cent proration plan, while the Voshel Pool is restricted to 50 bbls. per well.

Horace Fitzpatrick of the Prairie Oil & Gas Co. is chairman of the Kansas proration committee, and T. C. Johnson, independent operator, is state umpire.

Late Fields

GULF COAST

HOUSTON, Tex., Jan. 7.—Humphreys Corp.'s No. 8-A Kirby, which blew in last Saturday as the first deep producer on the northwest side of Barbers Hill, Chambers County, flowed 8,903 bbls. of pipe line oil in the 24 hours ending this morning. The well still was flowing partly out of control with a leak between the 7-inch and 10-inch casing which prevented choking in the well. The production, however, was held to two 1-inch chokes and one five-eighths-inch choke. This well, the best yet completed at Barbers Hill, is on the opposite side of the dome from where all previous deep sand development has been. The new well is at a total depth of 6,457 feet.

The Texas Company's No. 4 Dunman on the south side of Humble, Harris County, was completed Monday and during the 24 hours ending this morning flowed 1,376 bbls. of pipe line oil on a five-eighths-inch choke from the sand at 5,244 feet.

NORTH TEXAS AND PANHANDLE

FORT WORTH, Tex., Jan. 7.—Danciger and Champlin Oil & Refining Co.'s No. 3 Cook Faulkner, located in Section 30, Block B-2, H.&G.N. Survey, Gray County, is shut in at 2,826 feet on account of lack of storage. It encountered the first pay at 2,700 feet and the second at 2,822 feet and flowed 1,600 bbls. of oil with 15,000,000 feet of gas in 16 hours.

MICHIGAN

MUSKEGON, Mich., Jan. 7.—Average daily production of the three Michigan oil fields for the week ending Monday, January 6, at 7 a. m. showed an increase of 205 bbls. over the preceding week and an aggregate of more than 15,000 bbls. Dundee production of the Mount Pleasant Field at 7,600 bbls. was 250 bbls. a day higher than last week while Traverse production remained the same at 50 bbls. daily. Both Dundee and Traverse production held exactly steady in the Muskegon Field at 6,800 and 400 bbls. daily, respectively. Saginaw's production of Traverse crude dropped 45 bbls. a day from 245 to 200.

Dundee production in the two fields at Muskegon and Mount Pleasant totaled 14,400 bbls. daily and total Traverse crude of 650 bbls. daily increased the aggregate for the State to 15,050 bbls.

Discovery of an additional pay streak in Dundee wells deepened in the Muskegon Field kept Dundee production steady there. Completion of a new Traverse well on the Muskegon River flats kept the sweet crude production from decreasing.

OKLAHOMA

Oklahoma City Pool reached a new peak in production on the gauge of January 7, at 7 a.m. It made 132,375 bbls. from 19 wells. Three new wells were added to the field the last 24 hours. Indian Territory Illuminating Oil Co.'s No. 1 L. Canfield, SE cor. SW, Section 19-11-2w, made 432 bbls. the first 30 minutes, and 11,317 bbls. the first 16 hours. It is producing from the Arbuckle lime, the top of which was found at 6,061 feet, and the total depth was 6,510 feet. Same company's No. 3 Jennings, SE cor. NE SE, Section 13-11-3w, blew in making 404 bbls. the first 30 minutes, and it made 12,325 bbls. in 16½ hours. It was also producing from the Arbuckle

(Continued on Page 142)

High Spots in Field N ws

KANSAS

Activity shifts to McPherson County. Has three pay horizons.

SOUTHWEST TEXAS

Zapata County test, completed as good gas well, in unproven te.ritory 5 miles south of Magnolia's No. 1 Martinez.

NORTH TEXAS AND PANHANDLE

Gray County starting on second week of proration.
Shamrock well in Gray County increases flow.
Wilbarger production prorated.

CALIFORNIA

Standard completes 5,000-bbl. well at Kettleman Hills. Oil is 62 gravity with 90,000,000 feet of gas.
Completions in flush fields increase production.

ROCKY MOUNTAIN AREA

Good wells completed in New Mexico. Empire company has 1,500-bbl well in Jal area and Midwest Refining Co. 686-bbl. producer.
Oil show reported in South Dakota.

WEST TEXAS

Second completion in Ector County better than discovery well.
Andrews County well standing while bailing and swabbing water.
Irion County deep test not so encouraging.

NORTH LOUISIANA-ARKANSAS

Fifteen operations under way in Zwolle district.
Completion from deeper horizon in Monroe Field assures big gas supply.
Revival of interest at Carterville.

OKLAHOMA

New peak at Oklahoma City for 24 hours ending 7 a. m. Tuesday, 132,375 bbls. due to three new wells.
Big well at East Earlsboro makes 8,915 bbls.
Greater Seminole declines.

GULF COAST

New field opened on Moss Bluff Dome, on Liberty-Chambers County line.
Deep sand well on northwest side of Barbers Hill makes 8,903 bbls.
Deepest coastal well, southeast of Jennings Pool, increases production.

TULSA GEOLOGISTS ELECT

The Tulsa Geological Society held its annual meeting and election of officers for the ensuing year at the rooms of the Chamber of Commerce Building in Tulsa on the evening of January 6. The retiring president, A. I. Levorsen, was in charge of the meeting and there were about 100 members present. The retiring officers made reports and the growing condition of the society is reflected in the statement made by Secretary-Treasurer William W. Keeler. The present membership is 218, a gain of 46 for the year. A resolution was adopted to increase the dues from $2 to $3 per annum.

The new officers elected are: President, Frank R. Clark, Mid-Kansas Oil & Gas Co.; first vice president, Ira H. Cram, Pure Oil Co.; second vice president, T. E. Weirich, Tidal Oil Co.; and secretary-treasurer, E. A. Markley, Barnsdall Oil Co. The council is composed of C. L. Severy, L. G. Keppler and George S. Buchanan.

CARL TANNER PROMOTED

Effective January 1, Carl L. Tanner of Alluwe became division superintendent of the Wiser Oil Co. at Bartlesville, Okla., according to the announcement of Manager H. G. Ellis of the western division. He will have under his charge all producing properties in the Dewey, Osage, Kansas and Sapulpa districts. Mr. Tanner has had a wide experience as a production man and is particularly familiar with repressuring work.

VISIT VENEZUELA

CHICAGO, Jan. 7.—Officials of the Standard Oil Co. of Indiana have left for an inspection trip of properties of the Pan American corporation in Venezuela. The Standard of Indiana owns a large controlling interest in the Pan American. Officials making the trip include E. G. Seubert, president; and Allan Jackson, R. E. Humphreys and C. J. Barkdull, vice presidents.

BUYS FORT SCOTT COMPANY

The Mid-Continent Petroleum Corp. has purchased the station properties of the Fort Scott Oil Co. of Fort Scott, Kans. In addition to four service stations at Fort Scott, the company operates bulk stations at Hume, Mo., and Arcadia, Kans.

CLARK IS HONORED

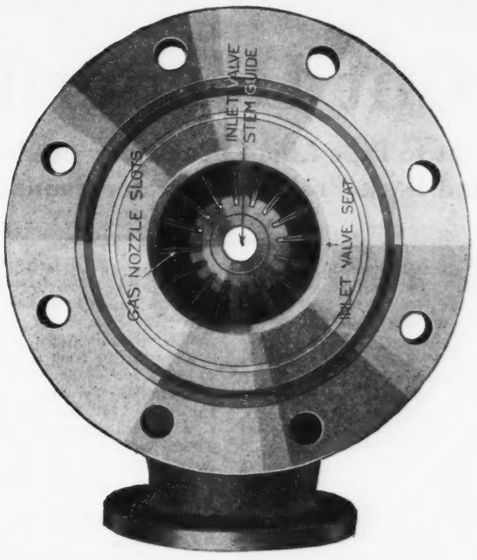
CHICAGO, Jan. 7. — Sheldon Clark, vice president of the Sinclair Refining Co., has been chosen vice president of the board of commissioners of Lincoln Park.

A.P.I. WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks—for the week ending January 4 follows:

	(1)	(2)	(3)	(4)
East Coast	100.0	3,184,700	5,998,000	7,431,000
Appalachian	91.6	529,000	1,282,000	805,000
Indiana, Illinois, Kentucky	98.6	2,028,600	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	87.7	1,844,800	3,604,000	3,277,000
Texas	90.7	3,779,000	6,590,000	13,757,000
Louisiana and Arkansas	96.8	1,120,300	2,161,000	4,499,000
Rocky Mountain	93.3	291,300	2,273,000	973,000
California	99.3	4,500,300	14,826,000	109,770,000
Total United States	95.4	17,276,000	42,217,000	144,017,000
Texas Gulf Coast	100.0	3,007,100	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	759,600	1,877,000	3,818,000

(1) Per cent refinery capacity represented. (2) Crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Question:

How does it save fuel?

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By a patented mixing arrangement which produces a perfect mixture of gas and air.

Send for the 48-page catalogue. It explains in detail both engine and compressor construction and how unusually high fuel economy is obtained.

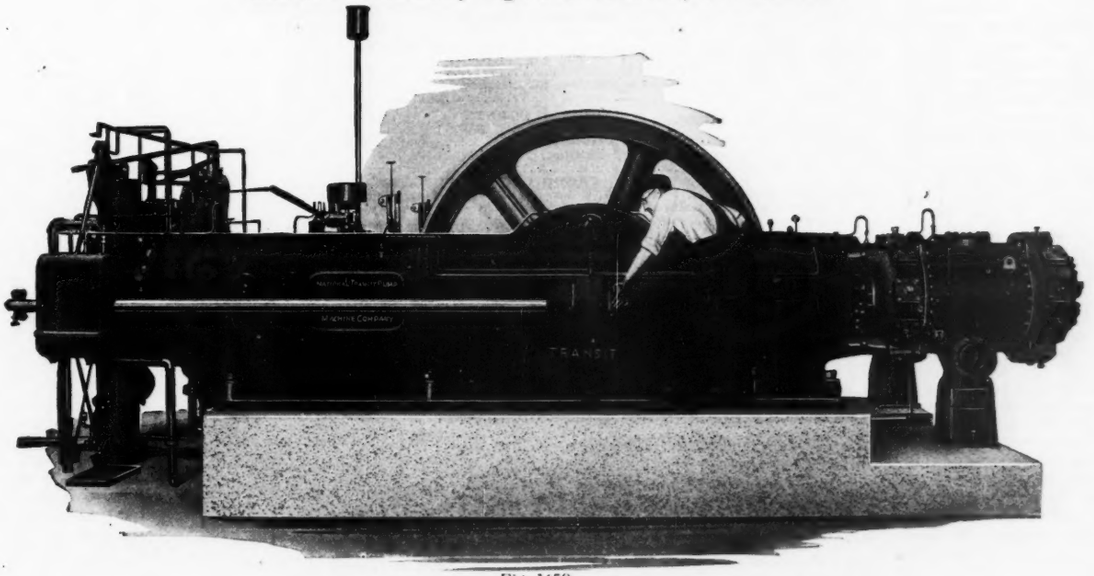

Fig. 1658

TRANSIT 17 x 24", Model 26 Gas Engine, with compressors. Side View.

Agents

FRICK-REID SUPPLY CORPORATION
Tulsa, Okla., or any store.

REPUBLIC SUPPLY COMPANY
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Los Angeles, California

E. L. WILSON HARDWARE CO.
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NATIONAL TRANSIT
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F. C. RICHMOND MACHINERY CO.
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REEVES & SKINNER MACHINERY CO.
St. Louis, Mo.

Production Cut Deeper in Okla. City A

Output Kept to Pipe Line Capacity by 50 Per Cent Curtailment and Back Pressure. Greater Seminole Declines

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oil production increased in Oklahoma the last week, the daily average production for the entire state for the week ending January 4 was better than 674,000 bbls. It amounts to an increase of approximately 27,000 bbls. daily, over the previous week.

The potential production of the Oklahoma City Pool grew to such proportions last week that operators in that field made a change in their curtailment program. More wells had been added to the list of those which are permitted to produce part time. These wells, characterized as A and B, if permitted to produce to even 60 per cent of their capacity would supply more oil than the pipe lines can handle, so it was decided to cut back to 50 per cent of their capacity by producing the wells only half time. This applies to January, but is subject to even deeper cuts if need be. In the past the A wells produced on certain days; the B wells on certain other days, and both A and B wells were opened wide a few days each month. Under the new plan the A and B wells will not produce on the same days and all will be restricted to half-time full production. In addition to this every producing well will be subjected to back pressure in order to conserve gas and to hold back intrusive salt water. This back pressure, which will be applied in accordance with the conditions at individual wells, it is hoped, will be the means of cutting down the production to even below 50 per cent of what the wells can do.

The Oklahoma City Pool has been unable to handle its salt water. The one disposal plant on the Sinclair Oil & Gas Co.'s lease in Section 30-11-2w, is reported to be unable to handle all of the salt water offered. It is now claimed that some of the water is finding its way into near-by streams.

Estimated Production 435,000 Bbls.

The estimated potential gauge of the Oklahoma City Pool on the last day of the year 1929, was about 435,000 bbls. Of this amount the Arbuckle lime is responsible for 300,000 bbls. and the Detrital sand horizon for about 135,000 bbls. daily. With the new development in areas where the Detrital sand has been productive, it is expected that by the end of June the Detrital sand will show a larger potential yield than the Arbuckle lime. The majority of new drilling under way in the pool is in the south and southeast part where the few wells now producing found oil in the Detrital sand.

Production in other parts of the State is declining. Greater Seminole, with the exception of East Earlsboro Pool, and the new shallow pool in Township 6-6, has been registering declines for some time. Some of the pools are under proration which accounts for part of the decline.

The gas pressure in six wells producing from the Arbuckle lime in the Oklahoma City Pool, has declined and the wells have been put on the gas lift. The wells so equipped are the Indian Territory Illuminating Oil Co.'s No. 1 S. Bodine, in Section 30-11-2w; same company's No. 1 fee, the discovery well; same company's No. 1 Foster, in Section 24-11-3w; same company's No. 1 Trosper, Section 13-11-3w; Sinclair Oil & Gas Co.'s No. 1 Stamper, in Section 30-11-2w; and same company's No. 5 Stamper, in Section 30-11-2w. Reports since the gas lift has been installed indicate that results have not been satisfactory. Some wells were helped after the method had been used while others were still making practically all water.

Seven New Wells

Seven new wells were completed in the Oklahoma City Pool during the week in review. Shell Petroleum Corp.'s No. 6 Petty, NE cor. NW NE, Section 30-11-2w, made 3,444 bbls. the first 22 hours. It found oil in the Arbuckle lime, topped at 6,070 feet and drilled to 6,504 feet. Prairie Oil & Gas Co. and others' No. 4 Hiddleston, NW cor. SE, Section 19-11-2w, made 15,815 bbls. the first 24 hours from Arbuckle lime at 6,090-6,548 feet. Tom Slick Oil Co.'s No. 1 Zerkerle, NW cor. NE NE NE, Section 13-11-3w, was opened for a 10-hour gauge and made 8,213 bbls. It completes the first 24 hours' gauge, as the well produced 14 hours about a week ago and was then shut in on account of lack of tankage on the lease. It made a total of 24,062 bbls. for the full 24-hour period. It has been shut in. Sinclair Oil & Gas Co.'s No. 4 Stamper, NW cor. SW NW, Section 30-11-2w, made 690 bbls. the first 24 hours from Arbuckle lime at a total depth of 6,635 feet. Indian Territory Illuminating Oil Co.'s No. 1 Jennings, NE cor. SE, Section 13-11-3w, blew in making 23,285 bbls. the first 24 hours. It has the Arbuckle lime at 6,015-6,515 feet. Coline Oil Co.'s No. 1 Warren, SW cor.. Section 18-11-2w, made 1,165 bbls. the first hour and 2,750 bbls. the first two and one-half hours from Arbuckle lime at a total depth of 6,516 feet. It was estimated to be good for 60,000,000 feet of gas per day. Indian Territory Illuminating Oil Co.'s No. 2 B. Johnson, NW cor., Section 25-11-3w, had Detrital sand at 6,413-28 feet. It made 230 bbls. the first 30 minutes, but fell off to such an extent that it produced only 986 bbls. in 18 hours.

Wirt Franklin Petroleum Corp.'s No. 2 Lowery, in Section 12-11-3w, has again been drilling deeper, and is at a total depth of 6,410 feet. It is in the Detrital sand. It increased its production to 16,421 bbls. on the gauge of January 3. It flowed 14,859 bbls. the day before. It is the most northerly producer in the pool at the present time. On account of the Wirt Franklin Petroleum Corp.'s well increasing its production, Jack Shaffer, Hall & Briscoe's No. 1 Childs, SE cor., Section 14-11-3w, was drilled deeper, from a total depth of 6,344 feet, Detrital sand, to 6,361 feet, and its production increased to 11,799 bbls.

The water encroachment in the Arbuckle lime wells is now as high as 40 per cent in some. Mid-Kansas Oil & Gas Co.'s No. 1 Browning, SE cor. NW, Section 18-11-3w, flowed 6,888 bbls. of oil and about 2,750 bbls. of water. It is cutting more than any other well in the Oklahoma City Pool. It is only two locations east of Indian Territory Illuminating Oil Co.'s No. 1 Thomas Fuzzell, which is the largest well yet completed in the pool.

Skelly Oil Co. and Replogle & Johnston announced a new location in the SW cor. NE SW, Section 1-11-13w, on a 10-acre tract, in the north end of the pool. Other locations were announced for Indian Territory Illuminating Oil Co.'s No. 9 N. Emerson, NW cor. SW SW, Section 30-11-2w; same company's No. 3 C. Brokaw, SW cor. NE NE, Section 13-11-3w; Coline Oil Co. staked No. 5 Clauer, NE cor. SE SE, Section 25-11-3w.

Shut in Production Increases

The initial production of the shut in wells completed in the Oklahoma City Pool, and as yet permitted to produce only 24 hours or less, is 287,369 bbls. Several new wells were added to the list during the past week. The initial production of each well was as follows:

Company and lease—	Well No.	Bbls.
I. T. I. O., Trosper	2	18,722
Mid-Kansas, Browning	1	11,575
Coline, Olds	2	4,683
I. T. I. O., Emerson Joyce	1	100
I. T. I. O., N. Emerson	1	872
Mid-Kansas, Fortson	3	3,242
Mid-Kansas, Fortson	5	6,256
Mid-Kansas, Mullman	1	1,478
Sinclair, School Land	1	6,682
I. T. I. O., Fortson-Farley 2	2	42,584
I. T. I. O., Watters	2	1,420
Shell, Petty	5	65
I. T. I. O., Trosper	3	8,626
Shell, Petty	4	700
Sinclair, Stamper	6	2,500
I. T. I. O., Verne	1	150
I. T. I. O., Verne	2	30,827
Skelly, Hoopes	1	32,037
I. T. I. O., Speegle	1	1,289
Coline, Warren	2	25,454
Slick, Zerkerle	1	24,062
I. T. I. O., Peterson	1	1,025
I. T. I. O., E. Fortson	1	14,687
I. T. I. O., Wheeler	1	6,747
I. T. I. O., N. Emerson	2	2,750
I. T. I. O., Jennings	1	23,285
Prairie, Hiddleston	4	15,815
Coline, Warren	1	*2,750
I. T. I. O., B. Johnson	2	946
I. T. I. O., Wheeler	2	†5,913
Shell, Petty	6	3,444
Sinclair, Stamper	4	690
Total	32	287,369

*Two and one-half hours.
†Five hours.

The continued water encroachment in wells producing from the Arbuckle lime and the fact that the field has been partly defined in the Arbuckle lime horizon except on the east and northeast, the majority of new operations are in the areas where the Detrital sand produces. Operators are beginning to explore the north end of the pool which is still an unknown quantity. Tom Slick Oil Co. announced new locations in the north end for No. 1 Curtis, NE cor. NW SW, Section 1-11-3w, and No. 1 in the NW cor. SW, Section 1-11-3w. Both locations are on small tracts and will call for several offsets. An attempt was made to pool the acreage by the operators but it was impossible to reach an agreement. An important test is drilling on the edge of Oklahoma City in Section 10-11-3w. If it should make a commercial producer a city lot drilling campaign may be attempted. The test is Hall & Briscoe and others' No. 1 Holmes, in approximateiy SE cor. NW SE, Section 10-11-3w.

The wildcat tests in the Oklahoma City area were drawing attention at the close of the week. Prairie Oil & Gas Co. and others' No. 1 Sudik, C NE

(Continued on Page 68)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:

Smith Bros.' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w ..... Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w .. Rigging up standtrd tools 4,660 ft.

BECKHAM COUNTY

Kay and others' No. 1 Martin, C E half E half NW Sec. 32-8-24w ..... Cleaning out 2,107 ft.; show gas.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... Shut down 1,575 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down.
Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 12-19-10w ..... Shut down 2,935 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w. Shut down 525 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 28-5-12w ..... Shut down 3,394 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1 ..... Rig.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w ..... Drlg. 7,690 ft.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e .... Shut down 1,235 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w .... Rig.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w.. Shut down 4,655 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w ..... Rig.
Continental and Barnsdall's No. 1 Brown, CNL SW Sec. 10-20-4w ..... Drlg. 3,690 ft.
E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Fishing 5,566 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.... Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.

GRANT COUNTY

Gypsy Oil Co.'s No. 1 Belderbeck, C SE SE Sec. 27-28-7w. Rigging up standard tools 5,681 ft.; 8-in. csg.
Bailey's No. 1 Stover, C SW SE Sec. 20-27-5w ..... Rig on ground.
Baucher et al's No. 1 Deadman, SW SE Sec. 12-28-4w.. Drlg. 4,875 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w ..... Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE Sec. 23-26-3w ..... Drlg. 2,730 ft.

GARVIN COUNTY

Nelson et al's No. 1 Strickland, NE SW Sec. 10-4-3 .... Rig.
Pickham-Harris' No. 1 Community Gaines, C NW NE Sec. 11-4-1 ..... Location.

GREER COUNTY

Helmerich & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w. Fishing 2,205 ft.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w ..... Straightreaming 1,902 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec.17-4-24w ..... Drlg. 410 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w .. Shut down 625 ft.

HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ..... Cleaning out 6,161 ft.; to drill deeper.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Drlg. 1,710 ft.

(Continued on Page 153)

Activity Shifts to McPherson County

With Three Pay Horizons as Objectives That County Will Be Kansas' Busiest Area Early This Year

By W. A. Spinney
Staff Correspondent, Kansas Fields

The Voshell Pool in McPherson County is the most active in Kansas at the present time. Disregarding the fact that the producing wells in the pool under the proration plan are restricted to 50 bbls. a day, which holds good until February 15, 18 new locations were made during the past week. Indications are that the pool will undergo the most intensive drilling campaign in Kansas in the first six months of the new year. Development of the Voshell Pool will equal development in the Valley Center Pool in the first six months in 1929.

Most of the new locations were announced after the first of the year. It is expected the area will have a total of 43 operations in a short time. At present the pool has 18 active operations. Production, which totals about 6,000 bbls. daily, has been found in the Wilcox sand, Viola lime and chat.

The new locations recently staked are as follows: Barnsdall Oil Co.'s No. 1, SE cor. SW SE, Section 4-21-3w; Derby Oil & Refining Co.'s No. 2, NW cor. NE SE, Section 9-21-3w; same company's No. 3, SE cor. NE SE, Section 9-21-3w; Dixie Oil Co.'s No. 1, NE cor. SE NW, Section 9-21-3w; Gypsy Oil Co.'s No. 1, SW cor., Section 3-21-3w; same company's No. 1, SE cor. SW, Section 4-21-3w; same company's No. 1, SW cor. SE NW, Section 10-21-3w, and No. 2, SW cor. NE NW, Section 10-21-3w; Empire Oil & Refining Co.'s No. 3, SW cor. SE NE, Section 9-21-3w; Independent Oil & Gas Co.'s No. 1, NW cor. SE, Section 9-21-3w; McBride, Inc.'s No. 4, NE cor., (twin) Section 9-21-3w; Indian Territory Illuminating Oil Co.'s No. 1, NE cor. NW, Section 9-21-3w, and No. 2, SE cor. NE NW, Section 9-21-3w; Mid-Kansas Oil & Gas Co.'s No. 2, NW cor. NE, Section 9-21-3w, and No. 3, SE cor. NW NE, Section 9-21-3w; Prairie Oil & Gas Co.'s No. 1 SE cor., Section 4-21-3w, and No. 2, SW cor. SE SE, Section 4-21-3w; Prairie Oil & Gas Co. and others' No. 2, SE cor. NW SW, Section 9-21-3w; Shell Petroleum Corp.'s No. 1, NE cor. SE SE, Section 9-21-3w; Sinclair Oil & Gas Co.'s No. 4, NW cor., Section 10-21-3w; The Texas Company's No. 1, NW cor. SW SW, Section 10-21-3w.

Showing in Eastern McPherson

Kansan Oil Co.'s No. 1 Otto, in Section 21-20-1w, in eastern McPherson County, found a showing of oil in chat at 3,000-09 feet. It was also making about 2,000,000 feet of gas. It is a wildcat located 10 miles east of production. On a later report water was showing. It may be drilled deeper.

Gas has also been found in the chat horizon in the Voshell Pool, in McPherson County. Two tests have reached the chat horizon and may be drilled into it in a few days. Both of these test wells are owned by the Sinclair Oil & Gas Co.

Sinclair Oil & Gas Co.'s No. 1 Voshell, SW cor. NW NW, Section 10-21-3w, had 1,000,000 feet of gas in the chat at 2,980-90 feet and has cemented the 6-inch casing at 2,990 feet. It is the east offset to the McBride, Inc.'s No. 2 Voshell, in the SE cor. NE NE, Section 9-21-3w, which has an initial production of 1,700 bbls. Sinclair Oil & Gas Co.'s No. 2 Voshell, SW cor. NW, Section 10-21-3w, has the top of the chat at 2,990 feet and is rigging up standard tools. Same company is building a rig for No. 3 Voshell, NW cor. SW NW, Section 10-21-3w.

Deepening Discovery Well

Derby Oil & Refining Corp.'s No. 1 Stuckey, NE cor. SE, Section 9-21-3w, the discovery Wilcox sand well in the Voshell Pool, is rigging up to drill deeper. The total depth of the well is 3,325 feet. The well which has recently been pinched in to 50 bbls. daily on account of the proration plan in the pool, made 45,000 bbls. in 35 days taking its discovery rights. Same company's No. 2 Stuckey, NW cor. NE SE, Section 9-21-3w, is building a rig and No. 3 Stuckey, SE cor. NE SE, Section 9-21-3w, is a location.

Prairie Oil & Gas Co.'s No. 1 Stuckey, NW cor. SW, Section 10-21-3w, is expected to reach the chat in a few days. It was drilling at 2,500 feet. Same company's No. 1 Krehbiel, SE cor., Section 4-21-3w, is a rig on the ground.

Aladdin Petroleum Corp. and E. W. Marland, Inc. are moving in a rig for No. 1 in the NW cor. SW SE, Section 10-21-3w. Helmerick & Payne's No. 1 Kaufman, NW cor. NE NW, Section 22-21-3w, south of the pool, is spudding.

Empire Oil & Refining Co.'s No. 1 Voshell, NE cor. SE NE, Section 9-21-3w, was rigging up to complete its three-day test. Each well after it has reached the pay is allowed to produce for three days before pinching it to 50 bbls. daily. The company has two days more of the period and it will resume swabbing. The well is estimated to be a 1,200 to 1,500-bbl. producer.

In the north extension to the Voshell Pool, Gypsy Oil Co.'s No. 1 Kinney, NE cor. NW SW, Section 34-20-3w, 1½ miles north of production, has been completed as a gas well. It is making 3,000,000 feet of gas at 3,102-04 feet. The company plans to use the fuel for nearby drilling. The east offset to the gas well, Derby Oil & Refining Corp.'s No. 1 in the NW cor. NE SW, Section 34-20-3w, was drilling at 3,320 feet, and expected to reach the Wilcox sand in a few days. It only had 1,000,000 feet of gas in the same formation from which the Gypsy Oil Co.'s well is producing.

The big well recently completed in the Ritz Pool in McPherson County, is coming back on production after declining as low as 1,200 bbls. a day. It is the Shell Petroleum Corp.'s No. 1 Miller, in Section 1-20-2w. It flowed 3,082 bbls. on December 28 and 2,844 bbls. December 29. The back pressure is still around 195 pounds with the tools in the hole. It was making considerable water.

The Southbrook Oil Corp.'s No. 1 Joseph, 1½ miles south of Potwin, in Butler County, has been swabbing around 70 bbls. daily from sand at 2,685-95 feet. It extends production in the old Potwin Pool and may result in additional drilling in the area.

An attempt to locate the Wilcox sand in an old shallow gas area in eastern Kansas is to be made by Steinbuckel and others' No. 1 in the SW cor. NE NW, Section 33-14-21, Douglass County, 12 miles southeast of Lawrence. It is located in an old gas field around 975 feet. The new test is located on a favorable structure in a block of approximately 4,000 acres.

Big Gasser in Cowley

Mid-Kansas Oil & Gas Co.'s new gas well near Burden, in Cowley County, has been deepened and has increased its gas flow to around 60,000,000 feet. The well is No. 1 Harris, NE cor., Section 20-31-6, Cowley County. It found gas at 2,215-27 feet. The well will be drilled deeper according to the company in search of oil. It is the largest gas well found in Kansas for some time. It also opens a possible new gas area in the county, and indicates the possibility of oil in the deeper formations. The Mid-Kansas Oil & Gas Co.'s No. 2 Harris, C NE NE, Section 20-31-6, Cowley County, on the same lease, is making 5,000,000 feet of gas at 2,213 feet, and was still drilling deeper. It will be shut in as a gas well to be used for future drilling purposes.

The second test well in the new pool 5 miles northwest of Wellington in Sumner County, has been located by the Sun Ray Oil Corp. It is located in the SE cor., Section 29-31-1w. The location is an offset to the recently completed well drilled by Slick, Pryor & Lockhart, No. 1 Peasel, NW cor., Section 33-31-1w, which is pinched to around 50 bbls. daily. It is producing from chat at 3,651-59 feet.

Sedgwick's Busy Year

During the past year 156 oil wells were completed in Sedgwick County with an initial production of 102,280 bbls. It is estimated the potential production of the county is approximately 35,000 bbls. daily. All the flush areas in the county are under a proration plan which curtails the production about 50 per cent. The majority of the oil comes from the Valley Center Pool, which has 116 wells. Most of these wells are producing from the Simpson formation. The Greenwich district, which includes the Lygrisse Pool, has 31 wells producing. The Robbins Pool, 4 miles south of Wichita, has seven wells producing and two dry holes. The Goodrich Pool has four wells producing. The balance are scattered, mostly one well areas. During the year 59 dry holes were completed.

Some new drilling is under way to test the Wilcox sand in northern Wilson County in the old Kansas Field. Several wells have been reported in the shallow areas in the county. E. H. Matthews and others' No. 1 Orr, in Section 4-27-16, was drilling at 700 feet. It is being drilled to test the Wilcox sand horizon in the area where the production comes from the Bartlesville sand.

In the Oxford and Churchill areas, Sumner County, the Shell Petroleum Corp.'s No. 1 Armstrong, NE cor. Section 12-33-1, is plugging back from a total depth of 3,817 feet. The wildcat test is located southeast of the Oxford Pool. Harold Petroleum Co.'s No. 3 Schwartz, NE cor. Section 27-34-2, was expecting to reach the chat in a few days. It was drilling at 2,900 feet. Production in the State Line Pool in Sumner County is declining. Gypsy Oil Co.'s No. 1 Williams, Section 16-35-3w, the discovery well, was pumping 47 bbls. Same company's No. 1 Enderude was flowing 948 bbls. and the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Clark in Grant County, Oklahoma, was flowing 460 bbls. Gypsy Oil Co.'s other well on the Oklahoma side of the pool has been plugged. The total production of the three wells is 1,445 bbls.

Kingwood Oil Co. and others' No. 1 Stayton, C NE Section 18-31-2w, Sumner County, a wildcat southeast of Conway Springs, is shut down at 3,840 feet. It is expected to resume operations when the frozen water lines have been repaired.

Butler County

Aladdin Petroleum Co.'s No. 1 Ow, NE cor. SE, Section 20-26-7, is drilling deeper at 2,760 feet. Empire Oil & Refining Co.'s No. 19 Hess, NE cor. SE NW, Section 18-26-5, has been completed for 35 bbls. in sand 2,623-45 feet.

Coffey County

Cross and others' No. 1 Fessenden, SW cor. NE, Section 33-22-14, is a dry hole at 1,730 feet. The Prairie Oil & Gas Co.'s No. 1, Scott, SW cor. NW, Section 13-23-14, has been abandoned at 1,652 feet.

Cowley County

Wakefield and others' rig is up for No. 2 Osborn, SE cor. SW NE, Section 18-30-5. Arkansas Fuel Oil Co.'s No. 1 Biddle, C SW NE, Section 7-32-5, is spudding.

Greenwood County

Phillips Petroleum Co.'s No. 1 Patterson, SW cor. SE SW, Section 22-23-11, has been completed for 142 bbls. in sand 1,917-97 feet. Sheedy and others' No. 5 Sharp, NW cor. SE NW, Section 5-24-13, made a 50-bbl. well in sand 1,612-20

(Continued on Page 120)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

BARBER COUNTY

Company, farm and location—	Remarks:
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w	Shut down 4,463 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Total depth 3,650 ft.; 5,000,000 ft. gas; landing 8-in. csg.

BARTON COUNTY

Prairie's No. 1 Davidson, NW SE Sec. 4-16-11w	Rig on ground.
Allison & Fitzwilliams' No. 1 Brodie, NE cor. Sec. 19-16-12w	Drlg. 3,360 ft.
Slick et al's No. 1 Sweeney, SW NE Sec. 23-17-11w	Shut down 2,410 ft.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.

BUTLER COUNTY

Shell Petroleum Corp.'s No. 1 Harper, SW NE Sec. 35-26-3	Spudding.
Lario O. & G. Co.'s No. 1 Miller, NE SE NE Sec. 36-26-3	Cleaning out 2,997 ft.
Martin et al's No. 1 Flanigan, C SW SE SW Sec. 29-27-3	Shut down 1,930 ft.
Stroub & Dutton's No. 1 Kirby, SE SW Sec. 12-28-5	Drlg. 2,983 ft.
Valley Osage's No. 1 Sirs, SE cor. Sec. 34-23-3	Shut down 2,600 ft.

CHASE COUNTY

Steinbuckel et al's No. 1 Stephenson, NE SW Sec. 4-20-6	Drlg. 530 ft.
Steinbuckel et al's No. 1 Cook, SE cor. Sec. 31-19-8	Drlg. 600 ft.
Empire's No. 1 Newman, SE NE Sec. 24-20-9	Drlg. 1,600 ft.
E. W. Marland, Inc.'s No. 1 Altemus, SE NE Sec. 33-18-6	Drlg. 2,550 ft.

CLAY COUNTY

Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.
Derby Oil Co.'s No. 1 Meimueller, C NW SW Sec. 9-10-3e.	Total depth 3,110 ft.; water; abandoned.

COWLEY COUNTY

Edenfield & Fair's No. 1 Wallace, CWL NE Sec. 17-34-4	Shut down 365-75 ft.; 2,000,000 ft. gas.
Fine et al's No. 1 Brown, SE cor. Sec. 8-32-4	Drlg. 980 ft.
Prairie's No. 1 Leighty No. 1 Ball, SW SE Sec. 4-30-5	Drlg. 2,420 ft.
Milton & Mead's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 1,920 ft.
Roth & Farout's No. 1 Thompson, NE SE Sec. 31-31-8	Show oil 1,975-91 ft.; total depth 2,004 ft.; swab. 80 bbls.

COFFEY COUNTY

Cross et al's No. 1 Fessen, SW NE Sec. 33-22-14	Abandoned 1,730 ft.

DICKINSON COUNTY

Cress' No. 1 Sanden, NE cor. Sec. 12-15-2	Rig.

(Continued on Page 154)

The Dubbs cracking process fits neatly and profitably into the plant of any refiner

It is flexible

Dubbs cracking operations can be adapted to fit the needs of the refiner's market on the one hand and the limitations of his crude supply or available charging stock on the other

Hundreds of Dubbs cracking units are meeting every

Big Gas Supply Assured from New Pay

Completion from Deeper Horizon in Monroe Field, Louisiana, Means Much to Cities Getting Fuel Supply from That Area

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 6.—More or less attention to developments in North Louisiana was divided three ways this week, in Zwolle, Carterville and the Monroe gas field. Zwolle came in for its share through a drill stem test of Olsan Brothers' well 1 mile north of the discovery well followed by a casing job, and as the week closed, consummation of a trade of large proportions concerning which there had been rumors for some time. Carterville shared in the talk through a similar transaction and Monroe is all excited over two big wells in the second sand 150 to 180 feet below the present producing horizon.

Benedum & Trees are reported to have offered R. L. Gay, trustee, and his principal, $1,000,000 cash, $2,000,000 out of the first oil and a 1/24 overriding royalty for the well—No. 1-A Bowman-Hicks in Section 34-8-12, and 10,000 acres immediately surrounding. The offer was refused. Walter Cook, Paterson, N. J., steel man whom Gay is representing, sold 105,000 bbls. of oil from his four wells in the Blue Lake (west) end of his Sabine holdings and the big well at Zwolle during December, 90,000 bbls. from the big well and 15,000 from the other four. Some time ago S. D. Hunter bought 10,000 acres of the Sabine Lumber Co.'s holdings scattered all around the well in eight townships, the trade calling for five wells in 90 days, location for the first of which is to be made during the next week or so. Standard Oil Co. was reported backing Hunter in the deal, or sharing in it, and this week announcement of purchase of a half interest in Hunter's acreage for $75,000 was made. Standard also bought 280 acre of the Bowman-Hicks' acreage in Sections 2 and 5-7-12 and 25, 27 and 28-8-12, north and east of the discovery. Lion Oil Refining Co. of El Dorado added to the holdings it acquired some time ago by buying the Ruston Drilling Co.'s 160 acres in Sections 4-7-12 and 35-8-12, on which derricks are up for No. 1 Bowman-Hicks in the first and No. 1 Holliday in the second. What was paid is not revealed but the wells will be drilled under the name of the vendors. Lion also bought 2,000 bbls. daily of Smackover heavy crude from the Texas Pipe Line Co., the contract to run for six months and the oil to be delivered from the McKenzie electric treating plant. The pipe line company has discontinued pumping to Shreveport from the Louann light oil area for an indefinite period.

Zwolle District Active

Fifteen operations are under way in the Zwolle district as the year begins, 12 in the Zwolle (eastern) end and three in the Blue Lake area, with indications that this number will be doubled before the month is over. The next well to test will be Olsan Brothers' No. 1 Keelan in Section 27-8-12, approximately 1 mile north and a little west of the producer. Top of the chalk was reached at 2,358 feet and testing tool was set at 2,370 feet. Left open for 17 minutes it produced no results and in trying to pull it the derrick was pulled in. Six and five-eights-inch casing was cemented at 2,333 feet and bailing test is due next week. There was a wild rumor on the streets as this is written that the well had blown in, but it was that and nothing more; just a wild—very wild—rumor. A case of the wish being father to the thought.

Carterville came into the picture through Phillips Petroleum Co.'s purchase from Sales & Walker of 400 acres surrounding their well in Sections 30 and 31-23-11, and the well, for $100,000 cash and $150,000 out of the first oil. Carterville, long dormant since it began fading as a gas field, came into prominence several weeks ago with Sales and Walker's completion of a 150-bbl. producer by drilling deeper on a played out gas well. Since then two more producers have been completed by the same process, one of them having an initial of 510 bbls. The oil is 44 plus gravity and the wells seem to be holding up. As most of the wells were finished with a large enough hole to permit going deeper and setting 4½-inch for the pay string, the discovery is figured as presaging a second period of considerable activity for this northeast Bossier Parish area and there are 16 operations under way there at present. The oil is found approximately 150 feet below the depleted gas horizon and the pool is served by two pipe lines.

Monroe Excitement

Monroe's wells were Magnolia Petroleum Co.'s Nos. 6 and 7 United States Government on the northern fringe of the proven area between Bastrop and the Ouachita River. Both are in the same section, 33-21-5, Morehouse Parish, and No. 6 gauged 31,443,000 feet at 1,010 pounds, total depth 2,369 feet, with the bottom only 1 foot in the sand. No. 7 was estimated at 45,000,000 feet at 1,005 pounds, total depth 2,382 feet, with the bottom approximately 12 feet in and the drill stem still in the hole. This sand is not entirely "new" either in as much as four or five wells south, southwest and north of them had tapped the deeper horizon but with not such good results. The sand is between 150 and 180 feet below the older producing horizon that has made Monroe one of the world's largest gas fields, and appears, from what is known of it—it was discussed in Bell and Cattell's report of 1921 issued jointly by the United States Bureau of Mines and the State Conservation Deartment as the latter's Bulletin No. 9—to extend over the greater part of the field; at least in Morehouse and Ouachita Parishes.

Operators seem to think there will be considerable deepening of smaller wells in the upper sand whose production has fallen nearly to the vanishing point as well as new holes starting from the surface. In view of the tremendous amount of gas required by the six major pipe lines pulling on the field and as many more smaller ones, this discovery is about the most important event that has happened to the field, as it guarantees it a much longer life than would be possible if the 2,200-foot horizon were all there is. While there will be some drilling, as indicated, it is much more probable that the second sand will be held in reserve against the day when the present producing horizon falls below commercial value, a matter estimated to be 15 to 20 years in the future. So, between Richland, West Carroll, and this second Monroe sand, consumers dependent upon northeast Louisiana for their fuel have no cause to worry over a shortage of gas

(Continued on Page 117)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA
BOSSIER PARISH—BELLEVUE

Company, farm and location— Remarks—

H. L. Morgan's No. 2 Wetherbee, 3,811 ft. E, 200 ft. S. NW cor., Sec. 28-19-11 ..... Tested sulphur wtr. 2,317-20 ft; coring 2,367 ft.

BOSSIER PARISH—CARTERVILLE

Del.-La. Dev. Co.'s No. 2 Bollinger, 200 ft. N, 200 ft. W. SE cor. NE NE, Sec. 31-23-11 ..... O.W.D.D; rigging up to deepen; T.D. 2,675 ft.

Goodman-Johnson's No. 1 Martin, 330 ft. S, 330 ft. E. NW cor. SE, Sec. 26-23-12 ..... Recmtd. 6⅝-in. 3,148 ft; T.D; S.L.M. 3,175 ft.

La. Pet. Corp.'s No. 2 J. W. Peyton, 1,170 ft. S, 150 ft. W, NE cor. SE, Sec. 25-23-12 ..... Derrick.

La. Pet. Corp.'s No. 3 Peyton, 660 ft. S, 150 ft. W, NE cor. SE, Sec. 25-23-12 ..... Derrick.

Palmer Corp.'s No. 4 Roberson, 660 ft. S, 660 ft. E. NW cor. NW NE, Sec. 26-23-12 ..... Tested dry; 4-ft. sand; 3,100 ft; csg. 3,104 ft; fishing 350 ft; D.S. T.D. 3,130 ft.

Magnolia Pet. Co.'s No. 1 M. A. Rogers, 660 ft. S, 660 ft. W, NE cor. NE SE, Sec. 21-23-12 ..... D.S. test 3,217 ft; 4 joints fluid; waiting on 5¾-in. to set.

Muslow Oil Co.'s No. 1 Barnett, 1,320 ft. W, 660 ft. N, SE cor., Sec. 25-23-12 ..... Cmtd. 6-in. 3,140 ft; 3-ft. sand 3,143 ft.

Muslow Oil Co.'s No. 1 Kilgore, 2,080 ft. N, 1,980 ft. E, SW cor., Sec. 31-23-11 ..... O.W.D.D; arranging to deepen; T.D. 3,078 ft.

Muslow Oil Co.'s No. 1 Mark Myer, 1,980 ft. N, 330 ft. W, SE cor., Sec. 36-23-12 ..... O.W.D.D; arranging to deepen; T.D. 3,088 ft.

Northwest La. Gas Co.'s No. 5 Bollinger, 252 ft. E, 200 ft. S, NW cor. Lot 7, Sec. 31, in Sec. 38-23-11 ..... Rigging up.

Nat. Gas Prod. Co.'s No. 1 U. S. Govt., 660 ft. N, 660 ft. W, C, Sec. 31-23-11 ..... Recmtd. 4½ in. 3,139 ft.

Sales & Walker's No. 4 Bollinger, 696 ft. S, 1,120 ft. E NW cor. SW, Sec. 30-23-11 ..... O.W.D.D; arranging to deepen.

R. G. Smitherman, trustee's No. 1 Kilgore, 1,310 ft. E. The Texas Co.'s No. 2 Peyton, 990 ft. N, 330 ft. W, SE cor., Sec. 25-23-12 ..... Location.

The Texas Co.'s No. 3 Peyton, 990 ft. N, 990 ft. E, SW cor., Sec. 30-23-11 ..... Location.

675 ft. S, NW cor., Sec. 31-23-11 ..... Waiting on fishing tools; T.D. 3,062 ft.

The Texas Co.'s No. 3 Hy. Rose Merch. Co., 4,126 ft. E, 1,520 ft. S, NW cor., Sec. 31-23-11 ..... Cmtd. 10-in. 394 ft; drlg. shale 800 ft.

CADDO PARISH—GREENWOOD

Eastern Carbon Co.'s No. 1 Z. Abney, Sec. 8-17-16 ..... Tested 2,000,000 ft. gas 2,749 ft; arranging to deepen.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 28 Jolly, 500 ft. N, 150 ft. W, SE cor. NE, Sec. 22-22-15 ..... W.O.S.R. 1,004 ft.

Bayou State Oil Corp.'s No. 29 Jolly, 425 ft. W, 775 ft. N, SE cor. NE ..... W.O.S.R. 1,014 ft.

(Continued on Page 113)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA
BOSSIER PARISH

Company, farm and location— Remarks—

Corbett et als' No. 1 Murff, SE cor. NE, Sec. 18-17-11 ..... S.D. 990 ft.

Simon Goldman's No. 1 McFarlin, SE cor. SW, Sec. 7-19-13 ..... Tested S.W.; show oil 1,000 ft. S.D.

Neil & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14 ..... W.O.S.R.; 980 ft. oil in hole; T.D. 998 ft.; arranging to re-test at 998 ft.

S. P. Lanier's No. 1 Le Rosen, 300 ft. S., 1,600 ft. W, NE cor. Sec. 26-21-14 ..... Derrick.

G. D. Nesbit's No. 1 Leonard, 1,900 ft. N, 957 ft. E. SW cor. Sec. 20-19-13 ..... D.S. test 2,547 ft; showed oil and gas; drlg. red shale 2,620 ft.

Old River Oil Corp.'s No. 1 Byrd, 300 ft. E, 300 ft. S, NW cor., Sec. 14-19-14, formerly carried in Dixie district of Caddo Parish ..... W.O.S.R; 1,200 ft. oil; T.D. 2,472 ft.

Walker et als' No. 1 Antrim, NW cor. SE. Sec. 28-22-13 ..... Tested dry; W.O. 3,184 ft.

C. L. West and others' No. 1 Sen oil & Dickson, 2,310 ft. W, 895 ft. N. SE cor. Sec. 3-20-13 ..... Derrick.

Woodmansee et als' No. 1 Bollinger, SE cor. NE, Sec. 9-22-11 ..... Dry and abd. 3,532 ft.

CADDO PARISH

R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE. Sec. 33-23-16 ..... Coring 4,403 ft.

I. N. Pharies, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14 ..... S.D. 2,322 ft.; topped sand at 2,396 ft.; set 6⅝-in.; T.D. 2,409 ft.

Old River Oil Co.'s No. 1 Sibley, 300 ft. E. 300 ft. S. NW cor. SE. Sec. 15-19-14 ..... W.O.S.R. 2,495 ft.

Woodley Pet. Co.'s No. 5-A Knight, 26,185 ft. E. 660 ft. N. SW cor. Township 16-12 ..... Location.

CATAHOULA PARISH

Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E. 396 ft. S. C. Sec. 26-9-6 ..... S.D. 900 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7 ..... S.D. 2,240 ft.

Leue Oil Co.'s No. 1 Taylor, Sec. 16-22-6 ..... Derrick.

Triangle Drlg Co.'s No. 1 Kilpatrick, 660 ft. S, 660 ft. E. NW cor. SW NE Sec. 7-19-5 ..... Drlg. shale 4,150 ft.

DE SOTO PARISH

Benedum & Trees Oil Co.'s No. 1 Johnson, 300 ft. S. 300 ft. W, NE cor., Sec. 7-11-13 ..... Derrick.

Benson Oil Co.'s No. 1 Harris, Sec 6-10-13 ..... Bailing to test show gas; T.D. 3,078 ft.

Benson Oil Co.'s No. 1 Hill, 1,345 ft. S, 1,200 ft. W, NE cor. Sec. 4-10-13 ..... Coring shale and lime 3,190 ft.

Magnolia Pet. Co.'s No. 1 Anna Mason, 990 ft. S, 990 ft. E, NW cor. SW Sec. 27-12-11 ..... Drlg. shale and lime 3,139 ft.

R. O. Roy's No. 1-B Farmer, 660 ft. S, 660 ft. E, NE SW, Sec. 8-13-13 ..... Derrick.

R. O. Roy's No. 1-E Farmer, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 5-13-13 ..... S.D. 725 ft.

(Continued on Page 112)

Fansler Well Reveals New Gas Spot

Zapata County Test, Completed as Good Gas Well, Is in Unproven Territory 5 Miles South of Magnolia's No. 1 Martinez

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Jan. 6.—Harry L. Fansler's No. 1 Cuellar in Zapata County came in a good-sized gas well at 1,676 feet with rock pressure of 670 pounds. It is located about 5 miles south of the Magnolia Petroleum Co.'s No. 1 F. G. Martinez, which came in several weeks ago at about 1,900 feet and opened a new gas-producing spot in that country. The Fansler test is in Survey 285 and is about 2½ miles east of the H. Muckelroy No. 1 Trevino, an oil producer at 1,300 feet. It is also about 3 miles west of the south end of the Randado Pool where oil production is at around 1,300 feet. The test is in unproven territory and opens a new gas-producing spot. It has 6 feet of sand.

The Fansler test is probably the most important development of the week in the Laredo territory which reported only two other completions. One is in the Kohler gas area in Duval County north of the Cole gas field, a 25-bbl. oil well by the Humble Oil & Refining Co., being its No. 38 Kohler in Survey 144. The other is a 30,000,000-foot gas well, the No. 1 Bruni, in Survey 5 of the Mariana Arispe grant by E. H. Buckner at 2,390 feet. It is a half-mile east of the town of Bruni in Webb County and west of the Cole gas field and in a territory where Killam and others have brought in a few wells at about the same depth.

Darst Creek Territory

The first official gauge and proration of the Darst Creek Field in Guadalupe County gives that field an allowable run of 9,998 bbls. The agreement calls for 10,000 bbls. daily. There were 15 wells in the field producing. Two other wells, one owned by the Gulf Production Co. and one owned by the Penn Oil Co., were expected to be in by January 5 and they were given the allowable amount for a 20-acre unit, which is 294 bbls. daily. This does not include the Magnolia Petroleum Co.'s wells which were gauged later. Magnolia is abiding by the agreement but has had its wells shut in. It does not include the Turman Oil Co. wells either, that company having refused to enter the agreement.

Turman has two wells in and sold 500,000 bbls. to the Grayburg Oil Co. of San Antonio in advance of his drilling the wells. He completed his line and started running the oil last week to the Grayburg refinery. In as much as the Grayburg Oil Co.'s refinery in San Antonio has been short of crude for some time, this additional supply of oil makes a considerable difference in the market situation in San Antonio.

The proration gauge on the tests in the Darst Creek Field was taken early last week and a further proration gauge will be taken on January 16 and prorations will be for 15-day periods. The report on the first gauge shows the potential production below the allowable proration, not counting the Magnolia tests. With them counted in, it would run considerably above the allowable 10,000 bbls. a day figure. The report is as follows:

			24-hr. Allowable			
	No. wells	No. units	poten-tial	On acr'ge	Poten-tial	Ttl. runs
Humble O. & R.	6	6	4,184	1,764	2,502	4,266
The Texas Co.	5	5	1,774	1,470	1,063	2,533
United N. & S.	1	1	1,056	294	632	926
Empire G. & F.	1	1	900	294	539	833
Trinity	1	1	320	294	192	486
Kirby Pet.	1	1	120	294	72	366
Gulf Prod.	1	1	...	294	...	294
Penn Oil	1	1	...	294	...	294
Total	17	17	3,354	4,998	5,000	9,998

Magnolia Petroleum Co.'s No. 1 Appling on a 2-hour gauge showed a potential capacity of 5,425 bbls. open flow. The field is allowed 4,998 bbls. on acreage and 5,000 bbls. daily on potential, giving it the total of 9,998 bbls. Darst Creek oil is 35 gravity and the posted price is $1.25 per barrel.

Four big wells were completed last week in the Darst Creek Field. They were as follows:

Company, well—	Depth	Initial Prod.
Magnolia, No. 1 Peter Klein	2,620	1,200
Empire G. & F., No. 1 Dowdy	2,619	1,750
Turman Oil, No. 1 Dowdy	2,615	1,500
Humble O. & R., No. 3 D. D. Baker	2,615	1,400

The three last wells named are in the southwest end of the field and with the Turman well offset by and located between the other two. They extend the field about 2,000 feet to the southwest and are three of the best wells in the field.

Penn Oil Co.-Simms Oil Co.'s No. 1 Manford, 2 miles from production at the northeast end and offset by two dry holes, has not been classed as being in the Darst Creek Field and will not be unless development of the field extends production to it, hence it is not shown in the proration gauge.

Eighteen Wells Tested

There were 18 wells in the field actually tested, but, eliminating the Magnolia's five producers, only 9 of the 17 shown in the table of potentials above were actually tested on an hour gauge. The results of this one-hour open flow carried out for 24 hours would give the actual production of the field an open flow the following showing with a total actual production of 17,773 bbls., provided the wells continued to flow at the same rate for the full 24 hours. On open flow by wells the gauge is as follows:

Company, well—	24-hour gauge (bbls.)	Company total
Magnolia:		
No. 1 Appling	5,425	
No. 1 Klein	1,200	
No. 1 Dix	456	
No. 1 Rand Miller	242	
No. 2 Dix	2,096	9,419
Humble O. & R.:		
No. 21 Denman	1,344	
No. 22 Denman	1,440	
No. 3 D. D. Baker	1,400	4,184
Kirby Pet.:		
No. 1 Miller	120	120
United N. & S.:		
No. 1 Dix	1,056	1,056
The Texas Company:		
No. 1 L. Anderson	768	
No. 1 Dallas Wilson	1,006	1,774
Empire G. & F.:		
No. 1 Dowdy	900	900
Total	17,453	17,453

Magnolia Petroleum Co.'s No. 1 A. M. Baker, located about 1 mile west of its No. 1 Appling and between the Appling and Penn Oil Co-Simms Oil Co.'s No. 1 Manford, is a dry hole and has been abandoned at 3,052 feet in the Edwards lime and flowing sulphur water. This rather dampens the idea for the present at least of a further extension of the field to the northeast.

Buchanan's Big Well

Al Buchanan's No. 1 Medlen, in the C. M. Cannon Survey in Caldwell County, 572 feet north of his No. 1 Brown, which was the discovery well of a new serpentine pool 2½ miles southwest of the Dale Field on a small choke, said to be as small as they can make it, has been putting out 33 bbls. of oil an hour or about 800 bbls. a day. Total depth is 2,080 feet and the oil is 40 gravity. It is the biggest producer thus far drilled in the field which consists at this time of five wells. The flow of the well is not unprecedented, as wells of that size were completed in the Lytton Springs Field flowing from the same formation.

Houston Oil Co. made a drill stem test of its No. 1 Wormser-Holbien in Brooks County 600 feet south of its discovery No. 1 Lasater, in sand at the same depth as the 4,110-foot sand in the discovery well. It showed up for a big gas well and casing will be set.

Production

Daily average production during the past week follows:

Branyon	26
Bruner	28,218
Dale	411
Darst Creek	3,959
Kingsville	214
Larremore	129
Luling	9,135
Lytton Springs	869
McMullen County	32
Medina	24
Mirando	9,849
Somerset	1,736
Yoast	1,015
Total	56,617
Week ending December 28	54,398
Increase	2,219

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Alexander Boynton's No. 1 Fee, in the John Sharp Sur., 3,645 varas E W line, 2,070 varas S N line of Sur., SW end of Somerset Field ..... T. D. 2,380 ft. in Marly chalk.

BASTROP COUNTY

B. L. Batts et al's No. 1 A. A. Alexander, W. M. Eastland Sur., 4,190 ft. to NW line, 1,320 ft. to SW line of Sur. ..... Shut down 1,325 ft.

Abernathy et al's No. 1 A. Aldridge, in the Martha Barker Sur., 2,750 ft. SE and 450 ft. NE of 241-ac. tract or 2,000 ft. SW and 4,500 ft. NW of Sur. ..... Drlg. 1,600 ft. in shale.

Superior Oil Co.'s No. 1, A. Lasher, D. Dykes Sur., 600 ft. to S and W lines of Sur. ..... Location.

BEE COUNTY

Houston Oil Co.'s No. 1 McKinney, L. C. Randolph Sur. ..... T. D. 3,971 ft.; installing heavier rig.

The Texas Company's No. 2 Tipps ..... T. D. 668 ft.; shale; abandoned; (core test).

The Texas Company's No. 3 Tipps ..... Drlg. in sand and shale 1,000 ft.

BEXAR COUNTY

Burton Oil Co.'s No. 1 P. H. Shook, in Monjares Sur., 3,150 ft. to E line, 150 ft. to N line of farm, 10 miles SE from San Antonio ..... Derrick.

F. H. Eckert's No. 1 Sandemer, Sur. 52 ..... Drlg. 615 ft.

Penn-Tex Oil Co.'s No. 1 Kate May, F. R. Desauge Sur. No. 134 ..... T. D. 2,080 ft.; dry and abandoned.

Ross E. Fenton Co.'s No. 1 Clarence V. Uhl, 150 ft. to S and W lines, 6 miles SE from San Antonio ..... Location abandoned.

Moore-Jauer's No. 1 Holly R. Ellison ..... T. D. 1,810 ft.; shut down.

E. G. Potter's No. 1 Watson, B. Martinez Sur. ..... Dropped from reports until work is resumed.

BLANCO COUNTY

Ashe & Marshall's No. 1, 5 miles S Johnson City ..... Shut down 85 ft.

(Continued on Page 148)

COMPLETIONS

Buchanan Pool—Caldwell County

Al Buchanan's No. 1 Medlin, 150 feet from S and W lines of farm, total depth 2,062 feet, flowed 305 bbls. first 12 hours from serpentine formation.

Darst Creek—Guadalupe County

Empire Gas & Fuel Co.'s No. 1 Dowdy in the Jacob Darst Survey, 150 feet each way NE corner of E. A. Dowdy 40-acre tract, total depth 2,619 feet, estimated 700-bbl. flow, swabbed 1,750 bbls. 24 hours.

Humble Oil & Refining Co.'s No. 3 Baker in the Jacob Darst Survey, 150 feet each way from SE corner of D. D. Baker 60-acre tract, total depth 2,615 feet, flowed 850 bbls. 24 hours, swabbed 1,400 bbls. 24 hours. Same company's No. 1 L. G. Denman in the A. S. Emmett Survey, 1,700 feet S line, 150 feet NE line of survey, total depth 2,590 feet, estimated 1,800 bbls., flowed 60 bbls. 1 hour. Same company's No. 2 L. G. Denman in the A. S. Emmett Survey, 1,500 feet S line and 150 feet NE line of survey, total depth 2,586 feet, estimated 1,800 bbls.

Magnolia Petroleum Co.'s No. 1 Peter Klien in the Joel R. Robinson Survey, 150 feet to NE line of lease, 150 feet SW of SW line of Alexander Survey, total depth 2,630 feet, estimated 600 bbls., flowed at the rate of 1,320 bbls. per day in 1 hour test.

Turman Oil Co.'s No. 1 Dowdy, SE corner of D. D. Baker 60-acre tract, 2,100 feet SW of Dallas Wilson No. 1, total depth 2,615 feet, swabbed 1,500 bbls. 24 hours.

Kirby Petroleum Co.'s No. 1 Rand Miller in the J. B. Alexander Survey, 3,450 feet to W line, 150 feet to N line of survey, total depth 2,624 feet, 150 bbls. top chalk 2,190 feet, top Edwards 2,607 feet.

Magnolia Petroleum Co.'s No. 2 Dix in the Joel R. Robinson Survey, offset to United North & South Development Co.'s No. 1 Dix, 150 feet to NW line of lease, 1,000 feet to NE line of lease, total depth 2,587 feet, estimated 600 bbls. by swabbing, top chalk 2,165 feet, top Edwards 2,570 feet.

United North & South Development Co.'s No. 1 Thomas Dix in the J. R. Robinson Survey, 150 feet to SE and SW lines of lease, total depth 2,597 feet, 1,100 bbls. oil per day, top chalk 2,160 feet, base chalk 2,315 feet, top Edwards 2,545 feet, elevation 492 feet.

Cole Pool—Duval County

Allied Gas Co.'s (Shell) No. 3 Dinn. Survey 143, 660 feet N line, 660 feet E line of NE of SE, total depth 1,735 feet, 25,000,000 feet of gas, 510 pounds rock pressure.

Cole Pool—Webb County

Houston Oil Co.'s No. 20-D Benavides, Block 5, Survey 753, 566 feet N line, 666 feet E line, total depth 2,351 feet, 75 bbls.

Magnolia-Cole Pool—Webb County

Magnolia Petroleum Co.'s No. 2 C. Benavides, Survey 662, 660 feet W line, 660 feet S line, total depth 2,335 feet, sand at 2,329-35 feet, 150 bbls. Same company's No. 1 F. Benavides, Survey 660, 660 feet N line, 660 feet E line of N half of SE of survey, total depth 2,335 feet, sand at 2,330-35 feet, 25,000,000 feet of gas, 600 pounds rock pressure.

White Point—San Patricio County

Spencer & Rhodes' No. 2 The Texas Company Fee, Lot 6, Roos Subdivision, 150 feet to S and W lines of W 50 acres, total depth 2,305 feet, 60,000,000 feet of gas.

Henne-Winch-Fariss—Zapata County

Magnolia Petroleum Co.'s No. 4, F. G.

(Continued on Page 116)

Open New Field on Moss Bluff Dome

Deep Sand Production at Barbers Hill Extended to Northwest Side of Dome. Deepest Coastal Well Increases Output

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Jan. 6—Opening of a new field at the Moss Bluff Dome on the Liberty-Chambers County line and extension of the deep sand production at Barbers Hill to the northwest side of the dome late the past week were two of the most important developments which have occurred in Gulf Coast Field operations in several months. The first Moss Bluff production was found by Humble Oil & Refining Co.'s No. 6 Sterling, which completed January 2, flowed 846 bbls. of pipe line oil through a five-eighths-inch choke the first 24 hours. At Barbers Hill, Humphreys Corp.'s No. 8-A Kirby, the first deep well on the northwest which is the far side of the dome from where the present deep sand development is, was out of control late Saturday with valves broken but was making 200 bbls. of pipe line oil an hour through two three-eighths-inch chokes.

The Moss Bluff well is producing from a sandy shale whose bottom is 5,666 feet. Twenty-six feet of 3-inch screen on 23 feet of 3-inch blank was set in the hole and the well is flowing through the 3-inch drill pipe to the top. The oil is typical coastal grade of 26.4 gravity (corrected for temperature). The bottom of the Barbers Hill well is at 6,460 feet with 19 feet of screen set. This is the deepest producing well at Barbers Hill and it generally is believed to be from the Jackson. The oil is comparatively high gravity being 34 degrees at a temperature of 80 degrees.

Sixth Test Drilled

Humble's No. 6 Sterling on the far east side of the Moss Bluff Dome climaxes a series of attempts on the part of that company to get off the dome and find a sand on the side. This is the sixth test drilled by this company, each successive one being drilled a little farther out from the top of the dome in a west to east line. All except the last failed to get off the dome and were abandoned in cap or salt.

Moss Bluff is one of the oldest of the geophysically discovered domes on the coast, being checked by the seismograph in 1926. Discovery of the dome is credited to the Gulf Production Co. but nearly all the major coastal companies, including Shell Petroleum Corp., Pure Oil Co., The Texas Company, Sun Oil Co., Humble Oil & Refining Co. and Gulf Production Co., have substantial acreage holdings and well scattered over that area. The dome not only is one of the oldest geophysical discoveries but has been found to be one of the largest known on the coast. The dome was proved early when the Union Sulphur Co.'s No. 1 Kyle on the first test in 1926 drilled into cap rock to 835 feet. Sun Oil Co., on the same Kyle tract, then drilled a series of tests in an attempt to move off the dome but each test failed finding cap rock or salt at comparatively shallow depths. Not including several wildcats drilled in the earlier days of coastal history, 13 tests have been drilled at Moss Bluff, one of which was a deep hole drilled by Pure Oil Co. last summer on the far north side of the area.

Humble's No. 6 is just south of the north line of the R. S. Sterling 1,044-acre tract in the James McFaddin Survey, which tract is offset on the north by Gulf Production Co.'s D. J. McFaddin lease. There is no other offset acreage.

Humphreys Corp.'s No. 8-A Barber is of particular interest at Barbers Hill because of previous deep sand development which has proved a line of prolific production extending from the far south side of the dome, around the east and to the far northeast side. This well indicates a continuation of the line of deep production possibly entirely around the dome, and makes the acreage on the north side of the dome between this well and the nearest production on the east, as well as the acreage between it and around the west side of the dome to Yount Lee Oil Co.'s production on the south side of the dome, appear very favorable. Humphreys Corp., however, holds virtually all the acreage in the immediate vicinity of the well. Humphreys Corp. has some small production consisting of several pumpers on the northwest side of the dome and in the immediate vicinity of this deep well but that is from a shallow sand around 2,000 feet.

The Humphreys well was one of two deep sand producers at Barbers Hill, the other being Sun Oil Co.'s No. 2 Wilburn fee on the southeast side of the dome. This well flowed initially at the rate of 1,400 bbls. daily from sand at a total depth of 5,315 feet. It was completed at the forepart of the week.

Southeast of Jennings

Yount Lee Oil Co.'s new deep sand producer southeast of the Jennings Field of Acadia Parish, Louisiana, which was brought in the preceding week as the Coast's deepest well at 7,447 feet, flowing initially at the rate of 700 bbls. daily, increased its output the past week to as high as 1,500 bbls., but since has dropped off to around 1,100 bbls. net oil with 20 per cent sediment and water. This company already has made location for No. 8 on this lease which will be about 300 feet to the east of No. 6, the second deepest well on the Coast.

Outside of Humble Oil & Refining Co.'s Nos. 6 and 9 Williams, completed early in the week for a combined 5,600 bbls. of flush production, and South Texas Petroleum Co.'s No. 13 Morris, a 500-bbl. well, there have been no more additions to the deep sand field south of Humble. The Texas Company has been bailing all week on its No. 2 Dunman, which failed to flow, and in which tubing now is being run, and has been trying to set

(Continued on Page 118)

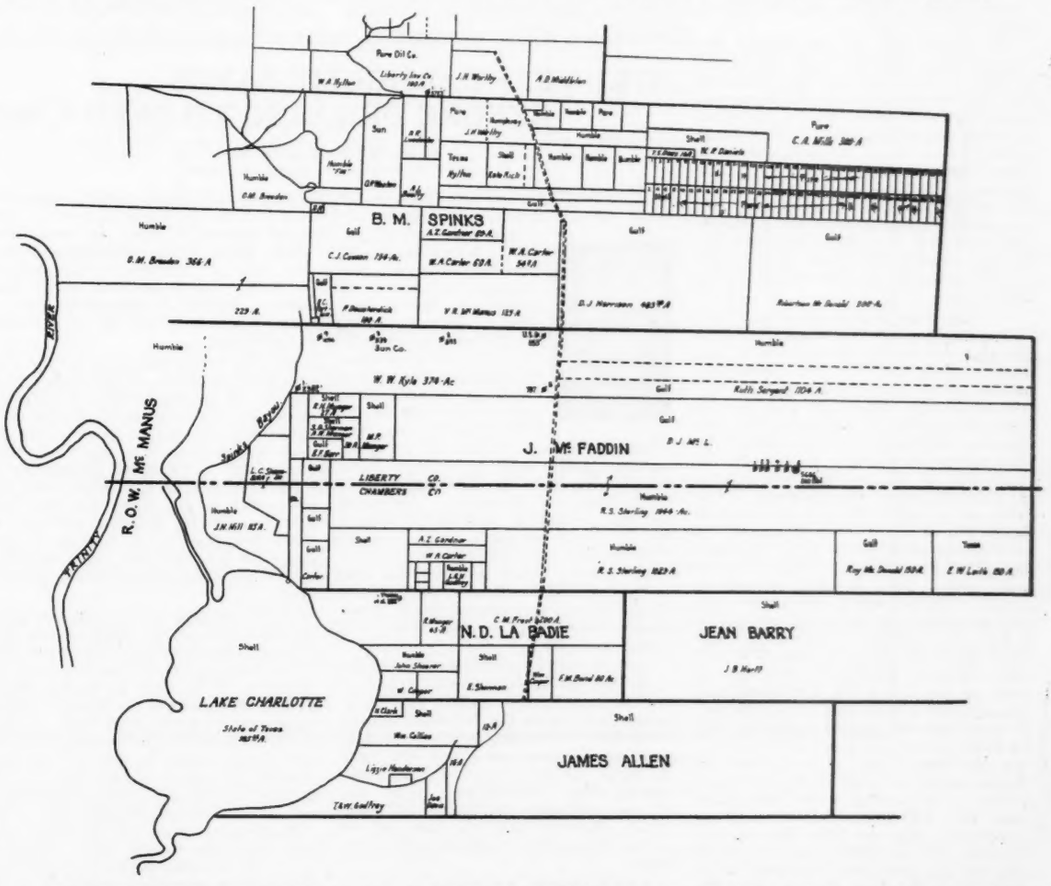
GULF COAST FIELDS AND WILDCATS

Week Ended January 4

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 2 Collier (southwest)..Cem. 6⅝-in. casing to test sand 5,383 ft.
Mills Bennett Production Co.'s No. 2 Barber, north side. Shut down waiting orders.
Mills Bennett Production Co.'s No. 3 Hammon-Armstrong (southeast) .....Comp. pump 50 bbls. oil 5,166 ft.
Mills Pennett Production Co.'s No. 2 Means (east) .....Drlg. shale and lime 2,326 ft.
Mills Bennett Production Co.'s No. 2 Wilburn, southeast..Drlg. shale 3,900 ft.
Humphreys Corp.'s No. 8-A Kirby, north flank ... .Flowing 4,800 bbls. oil 6,460 ft.
Humphreys Corp.'s No. 2-C Kirby .....Drlg. shale 3,867 ft.
Humphreys Corp.'s No. 1 McLean, east side .....Drlg. shale and lime 4,484 ft.
Humphreys Corp.'s No. 2 Ilfrey, east side .....Drill pipe stuck 1,406 ft.
Humphreys Corp.'s No. 1 Morgan .....Drlg. gumbo 1,420 ft.
McAlbert Oil Co.'s No. 4 Woodward southeast .....Drlg. sand and gravel 525 ft.
Republic Production Co.'s No. 3 Kirby (southeast).....Rigging to pump 5,335 ft.
Rexal Oil Co.'s No. 3 McLean, east flank ..... Comp. as small pumper 5,170 ft.
Sinclair Oil & Gas Co.'s No. 2 Wilburn, southeast .....Drlg. lime 4,848 ft.
Sinclair Oil & Gas Co.'s No. 3 Wilburn, southeast .....Rig.
Sinclair Oil & Gas Co.'s No. 1 McKinney (workover) ... Tested salt water 5,384 ft.; abandoned.
Sun Oil Co.'s No. 2 Wilburn, southeast .....Comp. flowing 1,700 bbls. oil 5,315 ft.
Sun Oil Co.'s No. 3 Wilburn, southeast .....Drlg. lime rock 4,937 ft.
Sun Oil Co.'s No. 4 Wilburn (southeast) ....Rig.
Sun Oil Co.'s No. 2 J. Wilburn (southeast) ....Drlg. gumbo 1,017 ft.
Sun Oil Co.'s No. 4 Chambers (south) .....Drlg. sand and lime 2,146 ft.
Sun Oil Co.'s No. 3 McKinney, southeast .....Drlg. shale and lime 1,425 ft.
The Texas Company's No. 1 Lawrence .....Pulling screen 5,260 ft.
Unice Oil Co.'s No. 2 Feldman, east .....Drlg. sand and boulders 485 ft.
Yount Lee Oil Co.'s No. 10 Chambers (south) .....Cored sand 4,774 ft.
Yount Lee Oil Co.'s No. 11 Chambers, south .....Cored sand 4,649 ft.
Yount Lee Oil Co.'s No. 2 Phillips, southeast .....Drlg. sand and gravel 846 ft.

(Continued on Page 114)



Map of Moss Bluff Dome showing location of Humble Oil & Refining Co.'s No. 6 Sterling, the discovery well, on the east.

Good Wells Completed in New Mexico

Empire Company Gets 1,500-Bbl. Producer in Jal Area and Midwest Refining 686-Bbl. One in Proven Area of Hobbs Pool

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 6.—The close of the old year in the Rocky Mountain area saw several good completions in New Mexico, including a 1,500-bbl. well in the Jal district and a 686-bbl. well in the Hobbs Pool; a 150-bbl. completion in the south extension of the Florence Pool in Colorado; an oil show 25 miles northwest of Hot Springs in South Dakota, and a 70,000-foot gasser on the Big Sand Draw structure in Fremont County, Wyoming.

NEW MEXICO

The Midwest Refining Co. has a completion in the Hobbs Pool in Lea County, New Mexico, for Christmas in its No. 24 State, NE SE SW, Section 10-19-38, an offset on the west to the Walker Oil Corp.'s No. 1 Terry. It was completed in the lime at 4,180 feet and made 686 bbls. in the first 24 hours, after which it was shut in. The pay was at 4,125-30 and 4,137-50 feet. This well had the top of the salt at 1,720 feet, the base of the salt at 2,685 feet and top of the lime at 2,925 feet. There were no other important developments in the Hobbs area over the holidays. The Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE, Section 30-18-38, 3 miles northwest of production, is coring at 3,920 feet in sandy lime. The Midwest Refining Co.'s No. 6 Wright, NW cor. SW, Section 14-19-38, is drilling at 2,545 feet in salt, and its No. 13 Terry, SE NE SW, Section 10-19-38, is drilling at 3,530 feet in anhydrite.

In the Jal area in Lea County, the Empire Gas & Fuel Co.'s No. 1 Lindley, C NE SE, Section 14-25-36, one-fourth of a mile to the northwest of the nearest producer, made 2,000 bbls. in 24 hours, of which 25 per cent was cut oil, through 3-inch tubing on a three-eighths inch choke with a back pressure of 375 pounds. The total depth is 3,380 feet. The well has been shut in for pipe line connections. The Humble Oil & Refining Co.'s No. 1 Koonce, SE cor. NE Section 14-25-36, an offset on the west to the Continental Oil Co.'s No. 2 Sholes, has rig up.

Lea Pool Draws Attention

The Lea Pool in Lea County came in for attention during the week with four wells reaching the objective. The Continental Oil Co.'s No. 1 State, NW cor., Lot 12, Section 1-21-33, an offset on the east to Cranfill & Reynolds' No. 1-B State in Section 2, the first producer in this immediate vicinity, is bottomed at 3,780 feet in lime and swabbing around 44 bbls. an hour. It commenced filling with oil at 3,779 feet and the oil rose 3,000 feet in the hole in 15 hours. It was then swabbed for 12 hours, the swab being run an average of three times an hour, and it made 350 bbls. during the period. The oil was lowered 2,200 feet. The quantity of oil showed an increase in a later test. It will be deepened. Cranfill & Reynolds' No. 2-B State, NW cor., Lot 9, Section 2-21-33, an offset on the west to that firm's No. 1-B State, was completed at a total depth of 3,765 feet. It made 250 bbls. on the pump the first 24 hours and at last reports was averaging 248 bbls. daily. It was somewhat disappointing as to production as it appeared to be running a few feet higher than No. 1-B State, which has been pumping as high as 2,200 bbls. a day. The elevation is 3,789 feet. It topped the salt at 1,870 feet, bottomed it at 3,360 feet and topped the lime at 3,395 feet. The pay was topped at 3,729 feet. The Amerada Petroleum Corp.'s No. 1 State, SW cor., Lot 7, Section 1-21-33, half a mile to the northeast of the Continental's No. 1 State, missed the pay and is being abandoned. It marks the limits of the pool on the eastern side. The elevation is 3,794 feet and total depth 3,960 feet. It topped the salt at 1,830 feet and bottomed it at 3,485 feet. It topped the brown lime at 3,573 feet and had a hole full of sulphur water at 3,958-60 feet.

Fourth to Reach Pay

The fourth well to reach the pay was Cranfill & Reynolds' No. 3-B State, SW cor., Lot 9, Section 2-21-33, one location south of the same firm's No. 2-B State. At 3,780 feet it was swabbed for one hour, after which the oil stood 3,300 feet in the hole, having risen 125 feet while being swabbed.

Another failure reported in Lea County was the Penn Oil Co.'s No. 1 State, NE, Section 21-19-36, west of the Hobbs area, which is reported abandoned at 4,500 feet.

Buell & Hagen's No. 1 State, C NE, Section 33-11-35, in the Tatum district in the northern part of Lea County, is shut down for orders at 4,800 feet. The Barnsdall Oil Corp.'s No. 1 Bronson, SE cor., Section 28-16-38, in the Lovington area, is drilling in salt at 2,335 feet. The top of the salt was at 2,165 feet. The elevation is 3,711 feet.

In Eddy County, Henderson, Dexter & Blair's No. 1 Arnold, NE SE SE, Section 23-17-30, Maljamar area, topped the salt at 515 feet and is drilling in salt at 965 feet.

In San Juan County in the northwestern part of the State, the San Juan Leaseholds Co.'s No. 3 Bowman, NE, Section 30-30-15, Meadows district, is resuming at 2,430 feet after being idle for several months. The 5⅜-inch was set on bottom before shutting down. The Kutk Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, is drilling at 1,310 feet. In McKinley County, J. W. Halsell's No. 1 Fairchild, SW cor., Section 4-18n-10w, Seven Lakes district, is shut down at 2,050 feet. It had a show of oil with water at 1,680-92 feet.

COLORADO

A wildcat started early in 1928 by the Canon-Reliance Fuel Co. to test the area a mile to the southwest of the Canon City Pool in Fremont County, Colorado, in its No. 1, SW NE NW, Section 16-19-70, failed to encounter any oil and was dry and abandoned at 4,015 feet, being one of the deepest holes drilled in the Canon City district. The Vogel-Raddatz Corp.'s No. 22 Travis, NE SE SW, Section 28-20-69, in the south extension of the Florence Pool in Fremont County, encountered the pay at 1,885 feet and at a total depth of 2,000 feet is estimated good for 150 bbls. initial. This company is building derrick for its No. 23 Travis, SE NE SW, Section 28-20-69, 660 feet north of No. 22 Travis.

The two wildcats drilling in Rio Blanco County, in the western part of the State, are both attracting special attention at this time. The Texas Production Co.'s No. 1 Potter, C NE SW, Section 30-2n-96, on the White River structure, is bottomed at 5,620 feet and drilling out cement plug. The 5¾-inch casing was cemented at 5,535 feet and the plans are to make a test of a gas sand at 5,544-64 feet. The White Eagle Oil & Refining Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is bottomed at 2,880 feet and underreaming the 8¼-inch to reduce the gas pressure. It will be landed on bottom if possible. The well is making considerable gas with a heavy pressure back of it, part coming up inside the 8¼-inch and part between that string and the 10-inch. The well is being allowed to blow to lessen the danger of a blowout. There is no water in the hole and the bailer will not reach bottom. No gauge of the flow has been taken, but it probably is in excess of 10,000,000 feet a day. This test is entirely in the Green River formation of Tertiary age.

Moffat County

In Moffat County, the Texas Production Co.'s No. 12 Knowlton, SW SE, Section 33-5n-91, on the Moffat Dome, has suspended without spudding until spring. The ground was so full of frost and the weather so cold that little progress could be made in getting ready. Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3n-92, in the fault area south of the Iles Dome, is still fishing for tools at 4,385 feet. The Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock structure, is drilling at 45 feet in yellow sand. The Texas Production Co.'s No. 1 Berlin, SW NE, Section 19-12n-100, Bartram Dome, is bottomed at 2,347 feet in gray shale and preparing to underream and lower the 6¼-inch.

In Larimer County, the Standard Oil Co. of Colorado's No. 1 Hertha, NW cor., Section 21-4n-69, Berthoud Dome, is drilling at 2,100 feet after cementing the 10-inch at 2,012 feet. A show of 400 feet of oil in the hole at 980 feet was cased off. The Warner-Mosher Drilling Co.'s No. 1 Reed, SW NW, Section 28-4n-69, is drilling at 2,605 feet.

In Boulder County, the Lyons Oil & Refining Co.'s No. 1 Mesa Dome, NW NW, Section 17-2n-70, is shut down at 2,415 feet in the Dakota with some water standing in the hole. There was not enough water to make the well flow.

In Las Animas County, the Helium Co.'s No. 1 Hall, SE SW, Section 19-27-59, Delhi Dome, is bottomed at 853 feet and drilling out plug.

In Huerfano County, the Parker Club, Inc., No. 1 Fee, Section 4-28-68, is bottomed at 3,923 feet and underreaming the 5⅜-inch to set on shell before drilling into the Muddy sand. This is a joint operation with the Kinney-Coastal Oil Co.

IDAHO

The California Co.'s No. 1 Sorensen, NW SW, Section 33-3n-41, Meadow Creek, structure, Bonneville County, Idaho, is shut down at 3,654 feet after cementing cavy ground. The Grand Teton Oil Co.'s No. 1 Blevins, SW, Section 33-5n-44, Horseshoe Dome, Teton County, is drilling at 1,720 feet with shows of gas, and its No. 1 Bevan, NE, Section 32-14-36, is drilling at 1,376 feet. The Monida Oil Co.'s No. 1 Rose, NE, Section 32-14-36, Beaver Dome, Clark County, has recovered tools and is drilling ahead at 810 feet.

SOUTH DAKOTA

An oil show reported in a South Dakota wildcat, 25 miles northwest of Hot Springs in Custer County, attracted attention from several scouts and geologists who went to the well from Denver. The well is being drilled by the Black Hills Petroleum Co. in the NW, Section 34-6s-2e. It started in the red beds and recently showed for about 100,000 feet.

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WILL TEST DALHOUSIE SANDS BEFORE DRILLING TO DEEP LIME

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 4.—In the South Turner Valley area, results secured at Merland Oil Co.'s No. 1, LSD 13, Section 27-18-2w5, are leading a number of other companies to thoroughly test the Dalhousie sands before drilling to the deep lime horizon. Crude oil has been encountered in a number of wells in the Dalhousie horizon, but Merland's No. 1 is the first to get crude naphtha in this sand. With around 100 bbls. a day it is also the largest producer from the Dalhousie. Following the big production secured by Home's No. 1, a little less than a year ago, the tendency has been for operators in the South Turner Valley to regard the lime as their immediate objective and to case off any shows encountered in the upper sands. This policy is now being very largely reversed.

Commonwealth Petroleums' No. 2, LSD 7, Section 9-19-2w5, has been cleared of drilling mud and is making a definite production test of the Dalhousie around 3,838 feet. If swabbing fails to develop satisfactory production a shot will likely be tried. At last reports the well was making about 2,000,000 feet of wet gas. It was previously drilled to 4,420 feet in an effort to reach the lime but cemented back when a crooked hole developed.

Alberta Pacific Consolidated's No. 2, LSD 5, Section 20-19-2w5, at 4,875 feet is cementing 8¼-inch casing preparatory to a test of Dalhousie production. The actual test will likely be under way within a week; if satisfactory production fails to develops drilling will be continued with 6-inch hole to the lime. Alberta Pacific Consolidated's No. 1, same LSD, is drilling in the lower Fernies at 5,200 feet.

Farther south, the tests in the Mercury group in Section 4-19-2w5, are planning to try out possibilities of Dalhousie production. Strong shows of light crude have been met in the sands above the lime in this section of the field. Mercury's No. 1, LSD 13, is standing at 4,585 feet waiting for rotary, and will be carried to the lime; but Mercury's No. 2, LSD 12, standing cemented at 4,264 feet, and No. 3, drilling at 4,705 feet, will both test the Dalhousie horizon. The latter is now drilling into the sand.

Another effect of the Merland strike is looked for in the way of increased activity in the extreme south of the field. Union Drilling Co. is starting Vanberta Oils' No. 2 in LSD 5, Section 34-18-2w5, a little north of the Merland. Everything was ready to spud when a windstorm blew down the derrick. Test is again being rigged to spud in early this month. A number of new tests are expected in Township 18 next spring.

Analysis of Merland Oil

Pending extension of the Regal pipe line from the Okalta lease, Merland's No. 1 is handling production by truck. Experiments are being continued to in-

(Continued on Page 119)

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BENAVIDES, TEXAS
EL DORADO, ARKANSAS
SEAL BEACH, CALIFORNIA

Standard Gets Big Well at Kettleman

Makes 5,000 Bbls. 62 Gravity Crude and 90,000,000 Feet Gas. Completions in Flush Fields Increase Production

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Jan. 4.—State production in California was back up again this week due to the completion of several large wells at Santa Fe Springs and the addition of the usual quota in other fields. The outstanding completion this week was the Standard's No. 8 in Section 1-22-17 in the north dome at Kettleman Hills, which came in doing 5,000 bbls. of 61.9 gravity oil and 90,000,000 feet of natural gas daily from 7,108 feet. This project, which has been beaned down to 3,000 bbls. per day, is a direct offset of the Milham's discovery well and will be permitted to remain on production in accordance with the Kettleman Hills agreement which contemplates a general cessation of work until July 1, 1931, if and when the Milham's initial completion can be shut down with safety. In the meantime all drilling operations will be suspended upon the validation of existing prospecting permits except for several wells which will be allowed to drill into production.

The Standard, which owns every other 640 acres in fee at Kettleman Hills, has suspended four drilling projects up to the present time and will shut down several more soon. The Continental, Milham Exploration, Pacific Western and Petroleum Securities have also suspended work on one or more projects in accordance with the agreement promulgated by the United States Department of Interior. The Standard's new completion, which is located on fee acreage, will be watched with considerable interest by the oil industry as it should help reduce the gas pressure on the discovery, No. 1 Elliott, an offset which the Milham is afraid to shut in. The possibility of reducing pressure in the immediate future is problematical as the discovery well built up after the Continental brought in its offset in Section 12-22-17. There are two other wells producing at Kettleman Hills in addition to the new producer just finished by the Standard. These are No. 8 Elliott of the Continental, flowing 6,175 bbls. per day, and No. 1 Elliott of the Milham, doing 3,375 bbls. daily. These should be augmented soon by No. 1 Oschner of the General Petroleum and No. 1 Felix of the Petroleum Securities, both of which are nearing completion. A month or so later the Standard should have another well on production when it recompletes No. 81 Fee in Section 11-22-17, the third offset to the Milham's discovery. This well came in several months ago from 6,673 feet but the company subsequently decided to add a little more hole in order to stimulate production.

Potential Production High

The accompanying chart showing production in California for the past year and the change in crude oil stocks for the same period, graphically portrays the effect of curtailment work during the past 60 days, and attention is respectfully called to the fact that daily potential production crossed the 1,000,000-bbl. mark for the first time since 1923, when the simultaneous development of three fields shot production all out of bounds. State production has shown a fluctuation of about 30,000 bbls. a day since being brought down by conservation work, due to the completion of new wells in flush fields but the production curve should begin to flatten out a little soon due to the decision of major companies to effect stabilized production wherever possible. Periodic fluctuations will always take place, of course, due to new wells but the general trend should be relatively steady. Heretofore most of the crude oil restriction in California has been below 20 degrees A. P. I., but since the early part of November light refinable crude is by far predominant. This is due to curtailment at Santa Fe Springs, Long Beach, Elwood, Seal Beach and Ventura Avenue.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	To al this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	997,250	2,988,419
Fuel oil	.....	.....	.....	.....	468,825	143,441
Diesel and gas oil	207,383	29,623	260,673	37,239	3,450,951	2,146,020
Gasoline	499,795	71,399	226,423	32,346	21,363,074	14,678,217
Kerosene	.....	.....	.....	.....	49,750	...
Naphtha distillate	.....	.....	.....	.....	81,750	339,109
Coastwise—						
Crude oil	188,811	26,973	192,564	27,509	25,148,972	25,018,711
Fuel oil	600,455	85,779	315,804	45,115	20,314,736	17,618,484
Diesel and gas oil	4,323	618	39,406	5,629	1,262,739	1,151,617
Gasoline	173,137	24,734	229,592	32,799	11,661,808	9,952,473
Kerosene	.....	.....	2,416	345	72,997	67,896
Naphtha distillate	.....	.....	.....	.....	.....	239,071
Exports—						
Crude oil	52,703	7,529	69,623	9,946	5,966,335	2,103,835
Fuel oil	388,208	55,458	421,638	60,234	19,424,691	22,607,604
Diesel and gas oil	11,626	1,661	85,517	12,217	2,849,860	2,297,959
Gasoline	177,990	25,427	421,958	60,280	12,666,325	8,252,717
Kerosene	72,350	10,336	78,915	11,274	3,284,586	3,940,564

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

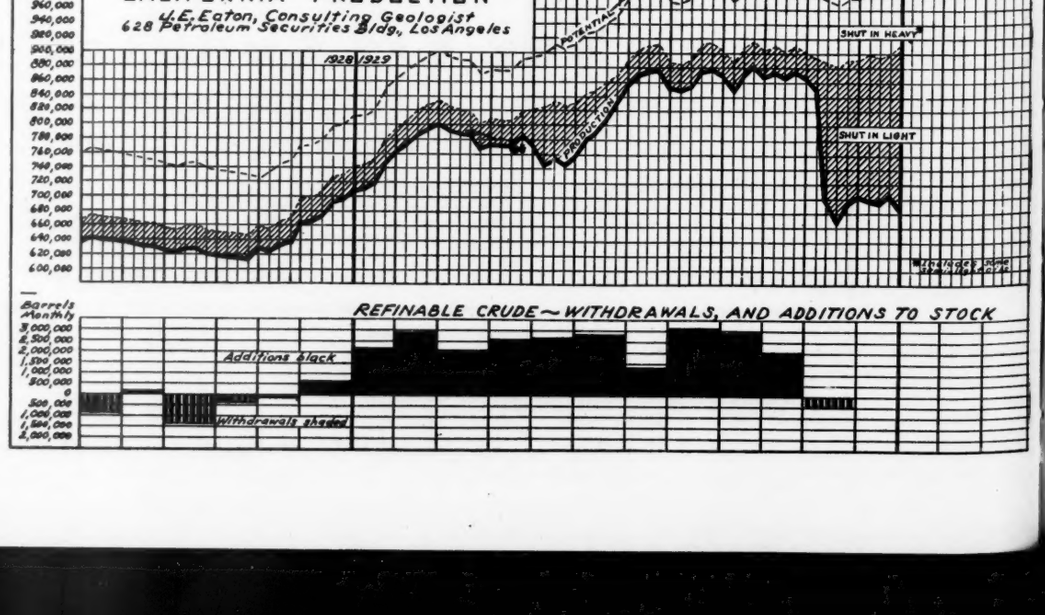
Diesel and gas oil	.....	.....	.....	.....	.....	418,188
Gasoline	147,914	21,131	.....	.....	2,423,552	2,231,234
Lubricants	9,988	1,424	.....	.....	148,694	277,151
Coastwise—						
Fuel oil	128,960	18,423	75,060	10,723	3,232,823	3,611,706
Diesel and gas oil	.....	.....	.....	.....	366,004	279,197
Gasoline	81,009	11,573	168,429	24,061	5,387,269	5,006,243
Kerosene	3,811	544	2,518	360	211,613	228,923
Exports—						
Crude oil	.....	.....	.....	.....	126,528	241,582
Fuel oil	.....	.....	.....	.....	841,631	2,222,314
Diesel and gas oil	.....	.....	.....	.....	393,132	149,298
Gasoline	161,962	23,137	9,088	1,155	5,587,349	4,471,496
Kerosene	.....	.....	.....	.....	624,180	786,553
Lubricants	.....	.....	4,780	683	34,575	91,615

The total curtailment in California approximates 300,000 bbls. per day of light and heavy crude oil at the present time but this will probably be increased still further by additional completions at Santa Fe Springs, where deep zone exploitation has been especially successful. Umpire Grimm estimates the present potential production of Santa Fe Springs at 331,261 bbls. and it is the general consensus of opinion that this will exceed 400,000 bbls. per day before the close of another month. Potential production for Ventura Avenue is placed at 61,671 bbls. of crude oil and 281,972,000 feet of natural gas daily. Curtailment work in this field is predicated on an allowable gas production of 160,000,000 feet daily. The potential production at Elwood has been fixed at 52,350 bbls. daily, although operators have been producing below the allowable maximum of 30,000 bbls. daily for several weeks.

According to Umpire Grimm's latest report, Santa Fe Springs operators produced 33,737 bbls. per day in excess of the allowable maximum fixed at 150,000 bbls. daily. This report indicates that the Wilshire Oil Co. and its subsidiaries were responsible for 20,184 bbls. of the total daily excess of 33,737 bbls. Next in line came George F. Getty, with a daily excess of 4,003 bbls., followed by The Texas Company with 1,735 bbls. daily, Superior Oil Co. with 1,573 bbls., H. A. Bardeen with 1,564 bbls. and General Petroleum with 1,271 bbls. daily. During the next curtailment period from January 1 to 15, the Union Oil Co. will be permitted to produce 27,032 bbls. daily, followed by the General Petroleum with 22,953 bbls. per day. The Standard has an allowable daily production for the next period of 12,043 bbls., Shell 11,699 bbls., The Texas Company 11,697 bbls., George F. Getty 7,120 bbls., Superior 5,957 bbls., Associated 4,371 bbls. and Richfield Oil Co. 3,639 bbls. In determining the allowable production of each company for the ensuing curtailment period, operators were either penalized for their excess production during the preceding period or credited with the amount produced below their allotment. Some question has arisen as to how long the curtailment program in California will contine in view of the fact that one operator with a large flush production at Santa Fe Springs has not yet become a party to the general agreement. In order to clarify the situation it might not be amiss to mention again that the major operators have agreed to pinch in their own production sufficiently to offset this surplus so that field production can be kept within the allowable figures. Small producers have also been given a good break as they will not be penalized unnecessarily. The umpire's latest statement covering Santa Fe Springs says that "As new wells have been brought in or made ready for production it has become increasingly evident that operators with small properties or production, who are not completing new wells, were at a serious disadvantage. Their production, under a rigid application of the percentage of curtailment, was threatened with decrease to a point of inequity. When this was called to the attention of the larger producers and those bringing in most of the new wells, they recognized the condition above outlined and consented to assume the greater portion of the curtailment."

Playa Del Rey

The Ohio Oil Co.'s discovery well, located between Venice and Playa Del Rey, is still holding up in good shape, the current production approximating 1,900 bbls. of clean 24.9 gravity oil and 1,100,000 feet of natural gas daily. One of the most interesting features in connection with the production of this well is that the natural gas contains 3.70 gallons of natural gasoline for each 1,000 feet of natural gas, an unusually high ratio. The


JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH
Barrels Daily
CALIFORNIA PRODUCTION
W. E. Eaton, Consulting Geologist
628 Petroleum Securities Bldg., Los Angeles
1928 1929
1929 1930
POTENTIAL CRUDE OIL
SHUT IN HEAVY
SHUT IN LIGHT
Barrels Monthly
REFINABLE CRUDE — WITHDRAWALS, AND ADDITIONS TO STOCK
Additions black
Withdrawals shaded

crude oil averages approximately 20 per cent gasoline but, on the other hand, has the rather unfavorable sulphur content of 2.57 per cent. The Ohio has tentatively staked location for a new well in this field but will probably not push future development work, at least not until the status of the town lot area has been determined. No work has yet been started on a pipe line to move the Ohio's production at Playa Del Rey, although the Western Oil & Refining Co. is moving current production to its Wilmington refinery in tank trucks and will probably continue to do so pending further developments. It is quite likely, however, that arrangements will be completed in the near future for the laying of adequate pipe line facilities either by the Western Oil or some other marketer. The erection of a natural gasoline plant will also be constructed shortly and in order to facilitate work the Ohio has already started road construction. The territory immediately adjacent to the discovery well is a marshy area similar to portions of the Seal Beach Field and will necessitate extensive grading and reinforcing to provide substantial foundations for future work.

The Playa Del Rey Field of Los Angeles Basin is an unknown factor as far as total productivity and scope of structure is concerned and it may or may not become an important factor in future production. All available evidence tends to indicate, however, that Playa Del Rey will be relatively large in area although the amount and thickness of sand present, prevailing water conditions, porosity and saturation of oil sands are important factors which have not yet been determined. This new field, which forms the third unit en echelon formation with Lawndale and Torrance comprising the other two members, is expected by many to become an important factor in future production as geological conditions are favorable for a substantial accumulation of oil. There is very little surface evidence of structure at Playa Del Rey and consequently only the bit can definitely determine subsurface conditions and areal extent. In commenting on the probable extent of the Playa Del Rey Field, it might not be amiss, however, to mention the fact that while some geologists have projected the axis of this structout out into the Pacific Ocean south of Venice for a considerable distance, there is a possibility that the structure may extend southeastward for a mile or more.

The possibility of a southeastern trend of the structure from the discovery well at Playa Del Rey is predicated on some wildcat exploration undertaken in 1922-3. Attention was first focused on the possibilities of this region when the Kitselman Oil Co. lost its initial test by a gas blowout which wrecked the hole in August, 1922, at 2,790 feet. A second hole started a few hundred feet west of the initial attempt was abandoned as a duster in April, 1923, at 4,220 feet, after failing to pick up the gas zone encountered in the first well. It is quite evident that the second project did not reach a sufficient depth to thoroughly test out this area as far as oil is concerned and a check indicates considerable leasing in this section. This is particularly important in view of the fact that if the axis of the Playa Del Rey structure parallels that at Torrance and Lawndale it will pass immediately south of the two wells in question. The Del Rey Improvement Association has been circulating petitions for the lifting of drilling restrictions in the Playa Del Rey area between Del Rey Boulevard on the south and Mildred Avenue on the north, taking in the entire strip of property between the lagoon and the sea and a concerted attempt will be made to stimulate drilling. The Los Angeles City Planning Commission will hold a public hearing on January 10 to consider the advisability of lifting restrictions in the southeastern part of Venice and although some opposition is bound to develop there is a possibility that the area in question may be rezoned to permit development.

Santa Fe Springs

One well for each day was the record established by Santa Fe Springs operators during the past week but this will probably be exceeded next week as 15 other projects are being prepared for immediate production. The best well finished during the past 7-day period was the Cypress Petroleum Co.'s No. 1 Wardman, a new well which was completed in the Clarke zone flowing 9,025 bbls. of clean 34.6 gravity oil and 5,000,000 feet of wet gas daily from 7,975 feet. The Union and General Petroleum each finished two new wells during the period in question, although the aggregate production of the former's wells greatly exceeded that of the latter. The Union's No. 19 Alexander is credited with an initial daily production of 7,500 bbls. from the Clarke zone at 8,000 feet, although it was pinched in to 6,500 bbls. within 24 hours after completion. No. 46 Bell, a former upper zone producer, came in flowing at the rate of 6,500 bbls. daily but water broke in subsequent to completion with the result that production fell off to 450 bbls. daily. This project will probably be taken off production and another cement job undertaken at 7,985 feet.

The General Petroleum's two latest producers at Santa Fe Springs, No. 177-E Santa Fe and No. 237 Santa Fe, showed an aggregate initial flow of 4,270 bbls. upon completion in the Clarke zone. The former was brought in doing 2,410 bbls. daily from 8,060 feet while the latter registered an initial of 2,040 bbls. from an even 8,000 feet, the oil in each case being clean and testing 34.3 degrees. The Universal Consolidated, a subsidiary of the Richfield Oil Co., finished a new producer in the deep zone when No. 12 Blanchard came in under a natural flow making 4,275 bbls. per day from the Clarke horizon at 7,871 feet. The Shell's contribution this week was No. 14 Golay, which made 1,090 bbls. daily after being redrilled and deepened to the O'Connell zone at 6,864 feet. An examination has disclosed the fact that a neighboring well was responsible for the cessation in flow of George F. Getty's No. 29, a recent completion at 8,000 feet. The bit from a nearby drilling project penetrated the casing in No. 29 at 7,750 feet, indicating a drift of 300 feet from the vertical in the offending well.

Santa Maria

One of the Union Oil Co.'s wells in the Lompoc section of the Santa Maria Field staged a freakish blow out during the early part of the past week and sent scouts and lease men on a wild goose chase looking for what was reported to be the discovery of a new oil field. It was finally explained, however, although not without numerous personal visits to the well by several scouts who were somewhat dubious, that the project which caused so much activity was No. 6 Purisima, an old producer of the Union Oil Co. The rumored discovery of a new field started when this well suddenly blew in and painted the surrounding country with oil before being brought under control. This project had been undergoing repressuring work for the past several months and the blow out was occasioned by the building up of a high head during this period. A leak had subsequently developed in the casing and the well was undergoing remedial work when it got away from the crew. Several million feet of the stored gas was lost before the well was brought under control but the company has the satisfaction of knowing that this repressuring work will ultimately prove advantageous upon resumption of production. This is evidenced by the fact that this project came back under a natural flow during the freakish blow out, whereas it was formerly a small inconsequential well.

Elwood

Operators in the prolific Elwood Field of Santa Barbara County will only be permitted to produce 28,546 bbls. per day during the first 15 days of January due to the fact that they produced 1,454 bbls. per day in excess of the allowable maximum during the month of December. The Barnsdall and Rio Grande, joint discoverers of the Elwood Field, will be permitted to produce 19,135 bbls. daily from January 1 to 15. The Pacific Western has an allowable daily production of 3,930 bbls. for the same period followed by the Elwood Exploration Co. (Honolulu Consolidated) with 1,533 bbls.,

(Continued on Page 117)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	2,800	br. sh. drilling
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	3,400	br. sh. drilling
Ohio Oil Co., No. 1 Lompoc, Santa Barbara Co.	2- 6-34	250	sd. drilling
Standard, No. 1 Point Arguello, Santa Barbara Co.	35- 6-36	2,400	br. sh. drilling
Calif. Oil Prop., No. 1 San Marcos, Santa Barbara Co.	3- 4-28	4,000	Sespe-drilling
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,455	Sespe-drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas well—idle
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	3,110	sd. sh. drilling
General Pet., No. 1 Goleta Tideland, Santa Barbara Co.	21- 4-28	515	cemented
General Pet., No. 2 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building rig
General Pet., No. 3 Goleta Tideland, Santa Barbara Co.	21- 4-28	rig	rigging up
General Pet., No. 4 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building rig
General Pet., No. 5 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building pier
U. S. Pet., No. 1 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building pier
U. S. Pet., No. 2 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building pier
U. S. Pet., No. 3 Goleta Tideland, Santa Barbara Co.	21- 4-28	100	sd. drilling
Macmillan Pet., No. 1 Goleta Tideland, Santa Barbara Co.	21- 4-28	mtl.	building pier
Standard, No. 2 Goleta, Santa Barbara Co.	X- 4-29	1,980	cemented
Tannehill, L. B., No. 1 Goleta, Santa Barbara Co.	24- 4-29	5,050	br. sh. drilling
Standard, No. 1 County Farm, Santa Barbara Co.	11- 4-28	2,144	suspended
General Pet., No. 2 Capitan, Santa Barbara Co.	4- 4-30	200	cemented
Oakburn Oil Co., No. 1 Capitan, Santa Barbara Co.	4- 4-30	mtl.	building pier
Oakburn Oil Co., No. 2 Capitan, Santa Barbara Co.	4- 4-30	rig	rigging up
Oakburn Oil Co., No. 3 Capitan, Santa Barbara Co.	5- 4-30	300	sd. sh. drilling
Oakburn Oil Co., No. 4 Capitan, Santa Barbara Co.	4- 4-30	mtl.	building pier
Oakburn Oil Co., No. 5 Capitan, Santa Barbara Co.	4- 4-30	mtl.	building pier
Shell Oil Co., No. 1 Capitan, Santa Barbara Co.	4- 4-30	1,250	sd. sh. drilling
Fields Gasoline Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	5,072	testing
Gorham, H. B., No. 1 Santa Maria, Santa Barabara Co.	33-10-34	4,550	br. sh. drilling
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,125	br. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,100	sd. sh. drilling
Gilmore Oil Co., No. 1 Gibraltar, Santa Barbara Co.	1- 5-28	rig	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	1,500	br. sh. drilling
Standard, No. 1 Casitas, Santa Barbara Co.	26- 4-25	111	sd. drilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	4,130	gas well—idle
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	90	sd. sh. drilling
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	85	sd. sh. drilling
Continental, Tideland permit No. 124, Santa Barbara Co.	33- 4-25	350	sd. sh. drilling
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	120	sd. sh. drilling
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	150	sd. sh. drilling
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	75	sd. sh. drilling
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	75	sd. sh. drilling
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	60	sd. sh. drilling
Continental, Tideland permit No. 131, Santa Barbara Co.	33- 4-25	mtl.	drive piles
Getty, Geo. F., No. 1 Carpenteria, Santa Barbara Co.	32- 4-25	68	cemented
Getty, Geo. F., No. 2 Carpenteria, Santa Barbara Co.	32- 4-25	55	cemented
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,450	br. sh. drilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	1,475	br. sh. drilling
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	375	sd. sh. drilling
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	5,730	reaming
Lockwood Oil Co., Well No. 1, Ventura Co.	28- 8-21	682	suspended
Milham Expltn., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	br. sh. drilling
Shell, No. 1 Mountain View, Kern Co.	29-30-29	....	location
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	3,800	suspended
Elmer Oil Co., No. 1-A Rosedale, Kern Co.	33-29-26	5,262	hd. sd. drilling
General Pet., No. 1 Rosedale, Kern Co.	23-29-26	5,540	hd. sd. drilling
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	4,500	br. sh. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
McVey, Max, No. 1 Jasmine, Kern Co.	23-25-27	rig	rigging up
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,690	redrilling
Mallery Willard, No. 1 San Emidio, Kern Co.	9-10-23	550	suspended
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,825	hd. sd. drilling
Knudsen, John, No. 1 Jacalitos, Fresno Co.	14-21-14	1,415	bl. sd. drilling
Rio Grande Oil Co., No. 1 Kerman, Fresno Co.	14-13-17	4,770	sd. sh. drilling
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,325	sd. sh. drilling
Western Gulf, No. 1 Penoche Valley, Fresno Co.	26-15-12	mtl.	building rig
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	4,158	suspended
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	5,160	br. sh. drilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	2,212	redrilling
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	cleaning out
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,742	suspended
Latin American, No. 1 Shandon, San Luis Obispo Co.	31-27-15	4,125	gr. sh. drilling
Chessher, H. B., No. 1 Dudley, Monterey Co.	8-22- 9	245	suspended
Union, No. 1 King City, Monterey Co.	8-22- 8	2,695	br. sh. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	3,225	hd. sd. drilling
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	780	suspended
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Dudley Ridge Synd., No. 1 Tulare, Kings Co.	12-23-19	1,305	gas—shut in
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,882	suspended
Porter, H. B., No. 1 Devils Den, Kings Co.	9-24-17	2,420	redrilling
Oceanside Oil Co., No. 1 Kreyenhagen, Kings Co.	32-22-16	300	suspended
Getty, Geo. F., No. 1 Dutton, Madera Co.	18-13-16	4,615	to test
Twin State Oil Co., No. 1 Soldani, Mendocino Co.	14-12- 7	1,690	sd. sh. drilling
Barnhart Trust, No. 1 Oakdale, San Joaquin Co.	3- 2-10	2,550	fishing
Inland Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,030	suspended
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	2,277	suspended
Terminal Oil Co., No. 1 Tulare, Tulare Co.	29-20-25	4,198	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	480	sd. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Simmel, L. G., No. 1 Inglewood, Los Angeles Co.	21- 2-14	490	sd. drilling
Raleigh Oil Co., No. 1 Malibu, Los Angeles Co.	1- 2-19	3,075	sd. sh. drilling
Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	3,075	sd. sh. drilling
Continental, No. 1 Alamitos, Los Angeles Co.	34- 4-12	6,050	hd. sd. drilling
Getty, Geo. F., No. 1 Riviera, Los Angeles Co.	27- 2-12	mtl.	building rig
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	2,490	hd. sd. drilling
Consolidated Exp. Co., No. 1 Compton, Los Angeles Co.	21- 3-13	5,150	abandoning
Hanners, George, No. 1 Watts, Los Angeles Co.	3- 3-13	3,655	suspended
Diller, W., No. 1 Watts, Los Angeles Co.	8- 3-17	2,245	sd. sh. drilling
Cal. Well Drlg. Co., No. 1 Compton, Los Angeles Co.	11- 4-13	8,500	testing
Archer Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,250	sd. sh. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,270	sd. sh. drilling
The State Co., No. 1 Puente, Los Angeles Co.	5- 2-10	3,500	sd. sh. drilling
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	945	sd. sh. drilling
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,615	cleaning out
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	2,275	br. sh. drilling
Coastline, No. 1 Devils Canyon, Los Angeles Co.	21- 5-17	2,400	gr. sd. drilling
Olympic Corp., No. 1 Calabasis, Los Angeles Co.	18- 1-17	216	sd. drilling
Martin, J. W., No. 1 Newhall, Los Angeles Co.	22- 1-17	982	suspended
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	8- 3-16	780	hd. sd. drilling
National Sec., No. 1 Newhall, Los Angeles Co.	1- 3-16	640	sd. drilling
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	900	sd. sh. drilling
Shell, No. 1 Bolsa, Orange Co.	18- 5-11	4,110	hd. sd. drilling
Shell, No. 1 Coyote, Orange Co.	28- 3-10	6,050	redrilling
Standard, No. 1 Coyote, Bastanchury, Orange Co.	21- 3-10	3,550	sd. sh. drilling
Union, No. 1 Coyote, Sansinina, Orange Co.	30- 2-10	1,925	br. sh. drilling
Beard, G. F., No. 1 Brea Canyon, Orange Co.	30- 2- 9	1,199	redrilling
Western Gulf, No. 1 Brea Canyon, Orange Co.	28- 2- 9	850	br. sh. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,950	testing
Oil Well Eng. Co., No. 1 Newport, Orange Co.	21- 6-10	2,795	suspended
Hall Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cemented
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,403	suspended
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	3,065	sd. sh. drilling
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,120	redrilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	X-13- 4	1,890	sd. sh. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	hd. sd. drilling
Duncan, N. L., No. 1 Mojave, San Bernardino Co.	8- 4- 6	rig	rigging up
Girard & Grimes, No. 1 Corona, San Bernadino Co.	8- 2- 8	rig	rigging up

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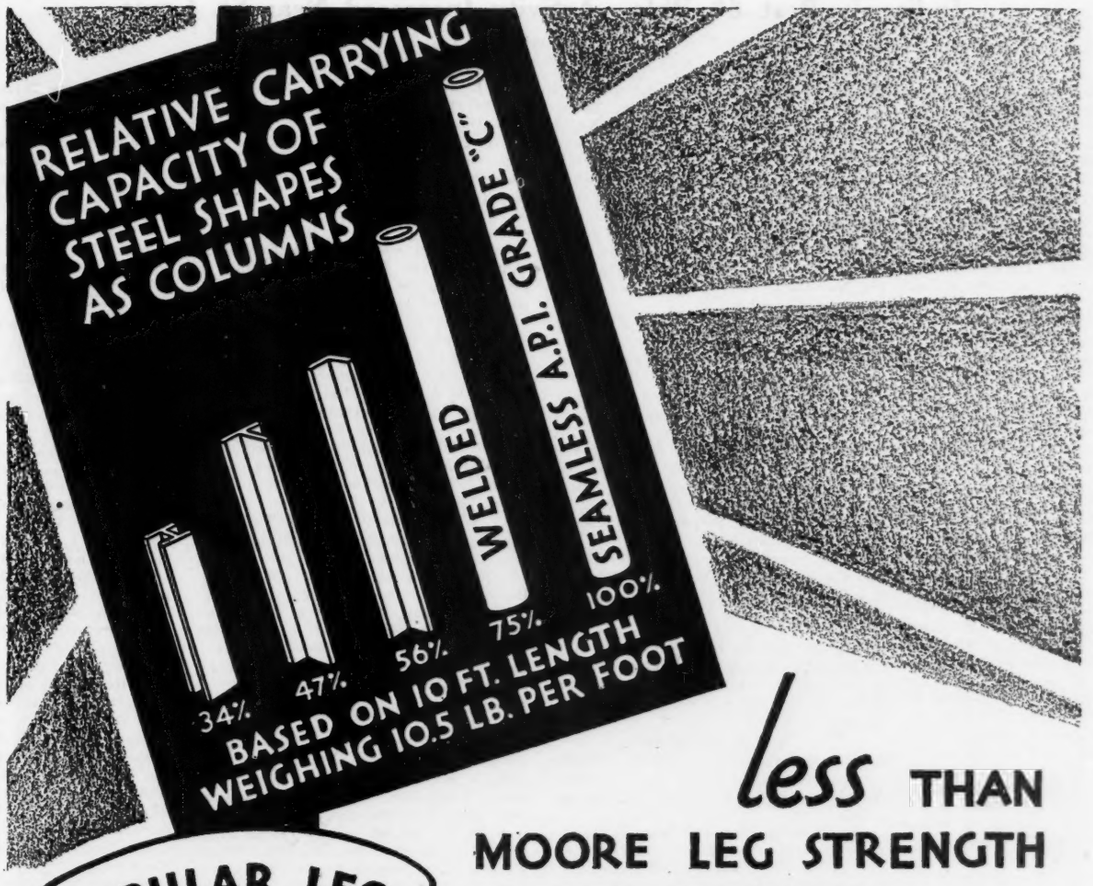

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Two Fair Wells Northeast of Lima

Allen County Has One 40-Bbl. Producer and Another 25 Bbls. Indiana's Best 80 Bbls. Activity Increased Near St. Louis

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 6.—In the old Lima Field of northwestern Ohio, two nice wells were brought in in Bath Township, Allen County, northeast of Lima. The better well was M. E. Roberts' No. 2 Eugene Roalman farm, Section 14, with an initial production of 40 bbls. the other being Neely and Nolan's No. 8, 600 feet from the north line and 300 feet from the east line of the Philo Bassett, SW Section 12, good for 25 bbls. initial from the Trenton topped at 1,328 feet and drilled 34 feet in to a total depth of 1,362 feet. Same parties abandoned No. 1 Harrison Bassett farm, Section 13, same township, and B. L. Carman and others pulled out No. 1 on the C. E. Baldwin, same section. Roalman & Pease are drilling a second test on the Steve Zelno, Section 14, same township, and H. F. Kelley and others are drilling No. 2 Charles M. Daubler, same section.

Clark A. Browning, old-time Toledo operator, has drilled in No. 35 well, 600 feet from the north line and 200 feet from the east line of the Frank McClare farm, NW Section 19, Bloom Township, Wood County, with an initial production of 14 bbls. Trenton was topped at 1,148 feet and drilled 256 feet into the formation to a total depth of 1,404 feet. This well is not far from old Station 8, just south of Cygnet, and the first well drilled by Mr. Browning for a number of years. Pelton, Davis and Ruedy made location on the J. P. Woodbury farm, Section 20, Plain Township, same county. Glass & Shellenberger's No. 3 well, 500 feet from the north and south lines of the Harry Brandeberry farm, NE Section 32, Perry Township, same county, got a heavy dose of salt water at 252 feet into the Trenton. Top of Trenton was found at 1,150 feet and the bottom of hole was 1,402 feet.

The test drilled by J. H. Murphy and Sons on the Isobal Sibrel farm, SE Section 31, Ballville Township, Sandusky County, that was reported dry, shows a fair volume of gas which will be utilized and possibly hitched to the Ohio Fuel Gas Co.'s line which goes into Tiffin. This well was drilled to a total depth of 1,535 feet, or 149 feet into the Trenton.

Margaret E. Grace and others are drilling No. 6 on the T. G. Fireovid farm, Section 21, Union Township, Mercer County.

C. V. Fisher abandoned Nos. 1 and 2 D. N. Morrison farm, and No. 1 on the W. B. Hill farm, in Section 5, Black Creek Township, Mercer County, and the B. Y. J. Oil Co. abandoned No. 1 G. L. Smiff, Section 21, Liberty Township, same county.

CENTRAL OHIO

There were 34 completions reported from the Central Ohio fields during the week of which 8 were producers with an initial of 207 bbls., 8 dry holes and 18 gas wells. New locations and drilling wells do not make as good showing as has been the case for many weeks, which is due to the weather.

In Ashland County the Ohio Fuel Gas Co. got a duster in No. 1-4,862 on the A. N. Evil farm, Section 20, Orange Township, and made a location for No. 1-4,986 G. E. Kauffman, Section 21, same township. Same company made a location for No. 1-4,987 on the E. M. Weltner, Section 3, Greene Township. In Mohican Township, the Kemrow Co. has a duster in No. 4 on the George W. Garst, Section 16, at 485-513 feet, which is the Berea sand. In Montgomery Township, the Kemrow Co. is drilling No. 1 J. O. Latter, Section 2, and No. 1 John L. Smith, Section 1.

In Medina County, Homer Township, the Kemrow Co.'s test on the Frank Rhader, Section 4, was dry. In this well the Stray sand was found dry from 2,958-64 feet, and the Clinton dry from 2,-969-81 feet. East Ohio Gas Co. is drilling No. 13 J. and A. Jalensics, Lot 2, Chatham Township.

In Lorain County, the Ohio Fuel Gas Co. has an average gas well in No. 4-4,-876 Julia Clark, Lot 13, Carlisle Township.

In Wayne County, Congress Township, Harmon & George have a fair gas well on the Lewis Howman farm, Section 32, at from 3,071-3,104 feet. Barnhart and others are drilling on the E. and W. White, Section 5, same township. Harmon and George are drilling No. 2 C. Peter Buckholtz, Section 26, Chester Township, same county.

In Holmes County, the Lydic Oil & Gas Co. has a very light gas well in No. 6 on the A. R. Mackey, Lot 6, Monroe Township, at from 692-98 feet. Ohio Fuel Gas Co. has a very fair gas well in No. 1-4,890 on the Levi Yoder, Lot 29, Paint Township. East Ohio Gas Co. is drilling No. 1 M. Gamble, Lot 28, Hardy Township, also No. 3 on the C. L. Sterling, Lot 27.

Ashtabula County

In Ashtabula County, Sheffield Township, the Ohio Fuel Gas Co. is drilling No. 1-4,977 on the George W. Kelsey, Section 19.

In Richland County, Monroe Township, the Ohio Fuel Gas Co. has an average gas well in No. 1-4,883 Sarah McFarland farm, Sections 27 and 28.

In Knox County, Jefferson Township, I. E. O'Hail has a light gas well in No. 3 on the R. P. Hipp, Section 21, at 3,-022 feet. In Brown Township, the Upham Gas Co. made a location on the Phillips Bross, Lot 38, and is drilling No. 2 E. Workman, Lot 37, and No. 3 on the J. T. Workman, Lot 8, same township.

In Summitt County, Franklin Township, Stolz Oil & Gas Corp. drilled a dry hole on the R. M. McCaughy, Section 13, and the Albright Oil Co. has a light gas well on the John Albright, same section. East Ohio Gas Co. made a location for No. 2 on the Adam Kepler, Section 24. In Greene Township, the Comet Oil & Gas Co. has a fair gas producer on the Ellen Daley farm, Section 31. East Ohio Gas Co. made a location on the Ada Lighton farm, Section 7, and Harmon & George are drilling on the A. and V. Vansickle farm, Section 5, same township.

In Licking County, Perry Township, the Hope Construction & Refining Co.'s No. 4 on the John C. Wright, Section 15, pumped 6 bbls. from 776-86 feet. Bishop, Deetry and Patton's No. 4 George E. Cotterman, Section 11, Franklin Township, is reported at 3 bbls. from 698-702 feet. Everette Gas Co. is drilling on the Criswell-Fenner, Section 13, Hanover Township.

In Muskingum County, Hopewell Township, the Mid-East Oil Co.'s No. 2 on the Moses Porter farm, that was reported dry, drilled a little deeper and found a gas pay from 3,314-77 feet, total depth 3,402 feet. In Falls Township, Ohio Fuel Gas Co. has an average gas well in No. 1-4,899 on the Oleita Swan farm, and drilling No. 1-4,963 Edward Swigert farm, Section 4. In Clay Township, Crawley and others' No. 1 on the Phoebe Cherry farm, Section 3, is reported good for 80 bbls. initial from 3,-593-3,644 feet. Bell & Scholl's test on the John G. Baughman, Section 9, same township, is reported at 25 bbls. from 3,477-3,518 feet, total depth 3,524 feet. Ohio Fuel Gas Co. is drilling No. 2-4,-951 James C. Hicks farm, in the Third-One-Quarter of Perry Township, same county. The Pure Oil Co. has an average gas well on the Arthur B. Dozier farm, Section 9, Brush Creek Township, at 4,154-81 feet.

Athens County

In Athens County, the Ohio Fuel Gas Co. has a gas well in No. 3-4,915 on the G. O. Linscott, Sections 5 and 6, Ames Township. Same company has a light gas well in No. 1-4,903 on the Pearl A. Russell, Section 31, Rome Township, in the Maxon-Keener sand from 997-1,005 feet. Same company has an average gas well in No. 1-4,931 F. I. Caldwell, Section 4, Carthage Township, at 1,085 feet.

In Meigs County, Sutton Township, Tyree and others' No. 3 Martin Ebersbach Co. lease, Section 19, produced 3 bbls. in the upper Berea from 1,810-20 feet, total depth 1,822 feet. Same firm is drilling No. 2 Lucius Lott, Section 13. In Rutland Township, T. Chase and others' test on the Florence Mutchler, Section 9, is a light gas well in the first Cow Run, from 471-83 feet. H. F. McTaggert and others' No. 5 Frank Halliday, Section 18, is an average gas well in the Maxon sand from 863-75 feet.

In Jackson County, Lick Township, the Penn Oil & Gas Co. has a fair gas well in No. 8 on the Charles Swan, Lot 67, same township, in the Clinton lime from 2,615-20 feet.

In Vinton County, Knox Township, the Co-operative Oil Co.'s No. 3 on the Cameron Clark, Section 4, is reported at 20 bbls. after given a shot in the Berea sand from 986-90 feet. Bell and others' No. 3 J. W. Stanley, same section, produced 10 bbls. initial along with a fair gas volume in the upper Berea from 1,-117-28 feet. Wittmer Oil & Gas Properties made a location on the W. H. Alkire, Section 2, Elk Township.

In Lawrence County, Perry Township, the Inland Gas Corp.'s No. 6 on the Hecla Iron & Mining Co.'s property, Section 23, is a light gas well in the Clinton lime from 2,974-80 feet.

In Scioto County, Porter Township, Browning Brothers' test on the J. Adams, Section 21, was dry in the Berea sand from 680-740 feet. Demick Brothers' test on the Albert Feurt and others' property, Lot 19, Green Township, was called dry at 1,432 feet.

Guernsey County

In Guernsey County, Wheeling Township, the Rallston Oil & Gas Co.'s second test on the William T. Virtue, Section 11, is reported good for 60 bbls. initial from the Niagara lime from 3,556-59 feet. Capital Drilling Co.'s test on the J. W. McFadden, Sections 1 and 2, same township, was dry in the Niagara lime formation from 3,548-80 feet. Ohio Fuel Gas Co. is drilling No. 2-4,923 on the C. C. Wilson, Section 11, same township.

In Belmont County, Somerset Township, Shay McMullen's test on the J. H. Stephens farm, Section 19, is reported showing for a gas well at 1,787 feet.

In Pike County, Beaver Township, the Beasley Oil & Gas Co.'s test on the Charles Spencer farm is reported given up as a dry hole at 682 feet.

In Morgan County, Marion Township, Williams Brothers' No. 5 Arthur T. Smith, Lot 12, is an average gas well in the Salt sand from 862-95 feet. In Penn

(Continued on Page 164)

THIRTY-DAY SHUTDOWN EFFECTIVE IN OWENSBORO FIELD, KENTUCKY

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Jan. 6.—The 30-day shutdown has brought about a great change in the Owensboro Field of western Kentucky. The operators are fulfilling their agreement, there being but a very few wells brought in since the shutdown took place on December 15, and those were on offsets. Drilling continues over the field, but what work is being done will stop before piercing the producing sands. This is one of the most complete shutdowns for many years. It gives the pipe lines an opportunity to empty their storage facilities near Owensboro. When the shutdown does end there will be a heavy development if conditions are such that work can be done. This is a hard country to work in when the weather is bad, as little can be moved over the roads, almost impassable during most of the winter season.

Completed Wells

In Daviess County, in the Utica Field, the Cumberland Petroleum Co.'s No. 1 on the George Beard is reported good for around 35 bbls. at a depth of 1,400 feet. Imperial Oil & Gas Products Co.'s No. 7 on the James Hayden 103 acres, in the Jones Pool, southwest of Whitesville, is a duster.

Only three completions were reported from the Ohio County area. S. R. Nigh and others' No. 13 in the SW cor. of the A. P. Kelley 340 acres, in the Deanfield area, is reported at 35 bbls. initial. The Ohio Oil Co.'s No. 12 W. B. Kelley 105 acres, in the Whittaker Pool, is dry, as is D. J. White and others' test 200 feet from the north line and 600 from the east line of the Nannie Hagan 75 acres, and just southeast of Oklahoma, and northwest of the Ambrose-Weller Pool.

Field Prospects

The Illinois Pipe Line Co. has completed its gathering line from the producing wells near Victoria in Hancock County, to a point near Deanfield, in Ohio County, where it connects with a larger line of the company which runs to the pump station east of Owensboro. For several months a number of wells on the James McGovern farm, near Victoria, have been producing and the oil stored in tanks, but now the oil is being run as fast as produced. The mineral rights on the McGovern farm are owned by the Camel Coal Co. More active development work will be started as soon as weather conditions will permit.

Plans are being made for a heavy development in the early spring in Muhlenberg and Hopkins Counties where late results indicate important fields. Other counties in the southwestern part of the State, as well as in the western and northwestern areas, are in for a thorough testing. The finding of oil just south of the Rough River fault means that this supposed worthless territory will now become the stamping ground of the operator.

This "BJ" 3" Wilson ROTARY ELEVATOR

held
6,975 ft.
of 3"
drill pipe
in a
15-foot
*drop!**

Unretouched photograph of elevator after the fall shows but slight damage which was repaired and the elevator put back into service.

AN impact equivalent to 754 foot tons occurred when the wire line broke and the elevator hit the table with 6,975 feet of 3-inch drill pipe . . . yet this elevator held the string, saving the pipe, preventing a bad fishing job, and possibly saving the hole . . . Life and property are safer with BJ Wilson Elevators.

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* The accident referred to occurred on the Sunset-Pacific Oil Company's Marine No. 31 at Athens, California.

Unsatisfactory Week in Eastern Fields

Southeast Ohio Alone Has a Few Fair Producers, One of 120 Bbls. in Perry County and Another 50 Bbls.

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Jan. 6. — The week proved to be one of the most unsatisfactory to operators of any during the year. Fewer wells were completed and the size of most of them below the average.

All through the year the deep sand territory in Southeast Ohio was the stellar attraction. Occasionally it furnished some very fair producers. The closing week of the year it had very few.

In the northwest quarter of Section 4, Harrison Township, Perry County, the Wehrle Co. completed and shot in the Clinton sand a test on the F. M. Sagle farm. The well had an initial production of 120 bbls. In Section 5, same township and county, the Preston Oil Co. completed a second test on the John Combs farm. It produced 50 bbls. the first 24 hours. In Fallsbury Township, Section 8, Licking County, the Emerald Petroleum Co. and others completed a second test on the Ira Weiss farm. It produced 52 bbls. the first 24 hours after shot. The location is 800 feet west of the first test.

SOUTHEAST OHIO

In Section 2, Jackson Township, Knox County, the Pure Oil Co. completed a second test on the P. J. Mavis farm, a 30-bbl. producer in the Clinton sand. In the northeast quarter of Section 12, Cross Creek Township, Jefferson County, August F. Becker, trustee, completed in the Berea grit No. 13 on the Becker farm. It is a 10-bbl. pumper, 500 feet north of No. 1, which is still holding up at 25 bbls. a day. Another well will be drilled east of No. 2 on the same lease.

In Section 29, Jackson Township, Monroe County, the American Oil Development Co. has a very light pumper at No. 4 on the George Deist farm. In Franklin Township, Herman C. Baker & Co. have a duster on the H. and L. Crum farm. In Section 29, Grandview Township, Washington County, the Hilltop Oil & Gas Co. has a duster at a second test on the C. E. Oliver farm.

In Pleasant Township, Perry County, the Trinway Oil & Gas Co. has a duster on the Rebecca Critchel farm.

In Section 29, Paint Township, Holmes County, the Ohio Fuel Gas Co.'s test on the Levi Yoder farm is a gasser in the Clinton sand good for 1,500,000 feet.

In the northwest quarter of Section 3, Salt Creek Township, Muskingum County, the Atha Oil Co. completed to a total depth of 4,250 feet a test on the L. V. Hunter farm. It is a duster in all sands. In Section 6, Monroe Township, Holmes County, the Lydick Oil & Gas Co. completed in the Berea grit No. 4 on the A. R. Mackey farm. It is a light gasser.

Monroe County

In Section 8, Franklin Township, Monroe County, the Preston Oil Co.'s test on the V. Carpenter farm, is a gasser in the Berea grit. In Section 9, Bethel Township, Clara Berg has a duster in the same formation at No. 5 on the Fred Nieb farm.

Guernsey County

In the northeast quarter of Section 11, Wheeling Township, Guernsey County, the North Salem Oil & Gas Co. completed in the Niagara lime No. 4 on the Amanda Gray farm. At a total depth of 3,465 feet it produced 60 bbls. In the northeast quarter of Section 20, same township, Galston Oil & Gas Co. completed a second test on the C. C. Virtue farm. It produced 45 bbls. from the same formation the first 24 hours.

In Section 13, Perry Township, Licking County, the Hope Construction & Refining Co. has a light pumper in the Berea grit at No. 4 on the James C. Wright farm. In Lot 3, Section 10, Chatham Township, Medina County, the Oko Oil & Gas Co.'s No. 34 on the Sanford-Watson farm, is a 5-bbl. pumper.

WEST VIRGINIA

In Cameron district, Marshall County, West Virginia, the Harmon Gas Co. has a gasser in the Salt sand at No. 3 on the H. Harmon farm. In Jefferson district, Lincoln County, the United Fuel Gas Co.'s No. 2,897, on the S. A. Egnor farm, is a gasser. In Scott district, Boone County, the Cameron Oil & Gas Co. has a gasser in the Berea grit at No. 10 on the George P. Alderson farm. In Washington district, the Hope Natural Gas Co. has a gasser in the same formation at No. 7,443 on the Allen farm. In Scott district, the Mountain State Fuel Co. has gassers at tests on the M. E. Holstein and Hill-Prichard farms.

On Reedy Creek, Reedy district, Roane County, the Heck Oil Co. completed and shot in the Berea grit No. 4 on the W. H. Enoch farm. It is a 5-bbl. pumper. In Center district, W. H. Bickel completed in the Big Injun sand a gasser on the Floyd V. Johnson farm.

In Murphy district, Ritchie County, F. B. Strothers & Co. have a gasser in the Big Injun sand on the F. B. Strothers farm. In Union district, the Central Oil & Gas Development Co. has a light pumper on the Oliver Goff farm. In the same district, the Carnegie Natural Gas Co.'s test on the M. L. Law farm is a gasser in the Big Injun sand.

On Breeden Creek, Harvey district, Mingo County, the Red Jacket Oil & Gas Co. completed No. 10 on its own property. The location is 1,000 feet north of the same company's No. 8, and is a gasser good for 3,500,000 feet in the Maxon sand.

Kanawha and Calhoun Counties

In Center district, Calhoun County, George Hamilton and others completed in the Big Injun sand a test on the W. A. Maheny farm. It is a light gasser. In Geary district, Roane County, the South Penn Oil Co. has a duster on the Nixon farm. The Charleston-Dunbar Natural Gas Co. has a light gasser in the Berea grit at No. 103 on the Frank Wiseman farm.

On the waters of Mud River, Grant district, Cabell County, the Larner Gas Co. completed No. 81 on the Gerloch Reynolds farm. It is a light gasser in the shale, one-half mile west of the same company's No. 82 on the Wasias farm. In the same district, on Charleys Creek, the Harshbarger Oil & Gas Co. completed and shot in the Berea grit a test on the German Chapman farm. It is one-half mile west of Beckett station and is a gasser good for 200,000 feet.

Doddridge and Wirt Counties

In West Union district, Doddridge County, the Columbia Carbon Co. has a light gasser in the gas sand at No. 55 on the Lewis Maxwell farm. In Clay district, Wirt County, W. C. Patterson has a duster at No. 35 on the Vernon-Donoho farm. In Geary district, Roane County, the Virginian Gasoline & Oil Co. has a duster at No. 5 on the J. M. King farm.

In Lee district, Calhoun County, Smith & Bickel have a gasser in the Big Injun sand on the John Slider farm. In Spencer district, Roane County, the Federal Oil & Gas Co. has a near duster at No. 48 on the Roberts, Pell and Newman farm.

In Reedy district, Roane County, the Heck Oil Co. completed No. 4 on the W. H. Enoch farm, good for 30 bbls. a day.

In Troy district, Gilmer County, J. E. Trainer completed a test on lease No. 1 on the J. W. Snider farm. It is a duster in the Gantz sand and has been abandoned.

Drilling and Starting Tests

In McKim district, Pleasants County, Hines Peevey has shut down at 923 feet on the Pearl Reed farm. In Murphy district, Ritchie County, Davis & Bickerstaff are rigging up on the Claude Childers farm. In Harrisville district, the Hope Natural Gas Co. is rigging up on the Caroline Moats farm. In Grant district, the same company has made a location on the Elizabeth Cain farm. B. C. Deen is rigging up on the A. Hall heirs' farm. In Mannington district, Marion County, Sutton Brothers are drilling on top of the 50-foot sand on the J. A. Thomas farm. In Geary district, Roane County, the United Carbon Co. has started to drill on the John L. Boggs farm. In the same district, I. Storts & Co. have started to drill on the C. O. Surface farm. In Smithfield district, the United Fuel Gas Co. is rigging up on the D. H. Harless farm. In Reedy district, the Hope Construction & Refining Co. has rigs up on the H. F. Enoch and L. Vandale farms. In Ravenwood district, Jackson County, Edward Hess is rigging up on the Arthur A. Gray farm.

In Sherman district, Calhoun County, C. B. Lewis & Co. have started to drill on the Lawrence Hamilton farm, and the Southeastern Gas Co. has started to drill on the Hannah A. Linger farm. The rig for No. 2 on the same farm has been completed. In Washington district, Godfrey L. Cabot is building a rig on the Thomas D. Smith heirs' farm. In Ravenwood district, Jackson County, H. C. Zogg is building a rig on the George A. Delaney farm. In the same district, Edward Hess & Co. are rigging up on the Arthur S. Gary farm. In Birch district, Braxton County, H. C. Zogg has made a location on the A. M. Couger farm.

Wood County

In Walker district, Wood County, the Penn Royal Oil Co. has started to drill on the Charles Smith farm. In Union district, Ritchie County, the Carnegie Natural Gas Co. has made a location on the F. E. Prichard farm. In the same district, Davis & Bickerstaff are rigging up on the Claude Childers farm. In Murphy district, W. H. Bickel has made a location on the Zack Weinerick farm. In Troy district, Gilmer County, the Hope Construction & Refining Co. is hauling tools to a location on C. W. Simons farm. In Reedy district, Roane County, the Heck Oil Co. has part of the rig material at a location on the J. E. and J. G. Watkins farm.

At the head waters of Fudges Creek, Grant district, Cabell County, the Hamilton Gas Co. has the rig completed and started to drill on the Mary Beckett farm, 1½ miles southwest of the Larner Gas Co.'s test on the L. B. Wetherholt farm. In the same district, on Indian fork, the Larner Gas Co. has started to drill on the W. N. Keaton farm, 1 mile west of the test on the Garloch Reynolds farm. In Battelle district, Monongalia County, the Hope Natural Gas Co. has started to drill on the Henry Haught farm and is rigging up on the Eli Fox farm. In Cameron district, Marshall County, the Manufacturers Light & Heat Co. is rigging up on the S. R. and Alice Chambers farm. In Church district, Wetzel County, Null & Co. are due in the Big Injun sand on the Ashcraft heirs' farm. In McClellan district, Doddridge County, the Little Five Oil Co. has a rig up on the Isaac Riffee farm.

Kanawha County

On Thoroughfare Creek, Big Sandy district, Kanawha County, the United Fuel Gas Co. completed in the Big Injun sand No. 742 on the Brown, Swan & Goshorn tract. It is a gasser good for 260,000 feet. On the same stream and in the same district and county, the same company completed No. 4,021 on the Eliza Bodkin farm. It is a gasser good for 1,039,000 feet.

In Center district, Kanawha County, W. H. Bickel completed a test on the F. V. Johnson farm. It is a gasser in the Big Injun sand good for 250,000 feet. In the same district, L. F. Bickel has a gasser in the Maxon sand on the W. M. Knight farm.

In Elk district, Kanawha County, the Virginian Gasoline & Oil Co. has a 6-bbl. pumper in the Squaw sand at No. 15 on the A. P. Hayes farm. In Sherman district, Boone County, Godfrey L. Cabot has gassers Nos. 33 and 34 on the Federal Coal Co.'s property. In the same district, the Coal Fork Oil & Gas Co. has a gasser on the Matthew Burgess farm. In Lincoln district, Wayne County, the Wayne United Fuel Co. has a gasser good for 500,000 feet on the A. W. Wilson farm, Nos. 10, 17, 23 and 26 on the same tract are drilling.

SOUTHWEST PENNSYLVANIA

In Morris Township, Greene County, the Natural Gas Co. of West Virginia completed No. 3 on the J. B. Powers farm. It is dry in the Nineveh 30-foot sand. In the same township, the Carnegie Natural Gas Co. has a light gasser at its No. 8 on the W. L. Scott farm.

REFINING PROJECT IN BRAZIL

Two years ago Marshal Pires Fereira made petition in the name of Augusto Cid Otero to the Federal Congress of Brazil for a concesssion covering the distillation and refining of petroleum and other oils. The finance committee of the Chamber of Deputies reported unfavorably on it, no formal action being taken by the chamber. A year later, November 19, 1928, Marshal Pires Fereira again petitioned with a similar but much amplified project.

This bill was referred for opinion to Dr. Victor Konder, minister of public works and transportation. He reported unfavorably on it, pointing out that the ultimate effect of such a concession would be loss to the national revenue, without any compensating cheapening of the petroleum products for consumption. No action was taken by the congress on the bill last year, however, and it was recently presented to the senate of the present session. It has attracted some debate, for, while the project was at first regarded as unlikely of passage, being so patently a private measure, the discussion has aroused some unexpected and formidable support.

KANSAS GEOLOGISTS ELECT

Officers of the Kansas Geological Society for 1930 have been selected as follows: J. L. Garlough, president; Anthony Folger, vice president; Perry Hanson, secretary; R. B. Rutledge, past president; and H. C. Mortlock, L. R. Fortier, L. W. Kesler and R. H. Hall, directors.

"THAT NEW TYPE-10 WINS ON EVERY COUNT"

"GENTLEMEN—now that we have definitely decided on 2-cycle gas-injection type compressors for the plant—let me tell you the result of my investigation at the Exposition. I looked them all over—and Cooper-Bessemer's New Type-10 wins on every count! I noticed nine distinct improvements—here they are: Water jacket full length of power cylinder; Increased exhaust port capacity and wider bridges; Increased inlet port capacity; 50% greater capacity in scavenging valve; Positive cooling water flow through exhaust bridges; Improved steel cylinder head; Improved type piston; Better lubrication for exhaust bridges; and, improved general appearance. With these new features, plus the reliability we all know, I am sure these engines should be our first choice."

The reaction of this refinery superintendent is the same as that of thousands of oil and gas men who have examined the New Type-10.

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Formerly The C. & G. Cooper Company and The Bessemer Gas Engine Company

Mount Vernon, Ohio Grove City, Pa.

Branch offices in all principal oil and gas fields

TYPE — 10

MEN KNOWN IN OILDOM

Jack T. French

Jack T. French, assistant to the president of the Richfield Oil Company of California, was born in Virginia, December 31, 1891, and is a graduate of Marshall Training School in San Antonio, Tex., and the University of Texas, in Austin. After completing his education he went to California and was with the Standard Oil Company of California for 10 years. Starting in Fresno, he went to Bakersfield as assistant manager, and then to the general offices of the Standard Oil Company in San Francisco, where he handled, principally, sales promotion and educational work and the development of new markets in connection with manufactured products of all kinds.

Since joining the Richfield Oil Company in July, 1927, as assistant manager of the lubricating oil department in Los Angeles, Mr. French has been particularly engaged in general sales promotion work, primarily along the lines of educating the Richfield sales force and distributors in the proper use of lubricating oils. He has talked to probably 25,000 persons in 200 meetings a year in California and Nevada since his connection with Richfield, these talks being given before employes of industrial concerns, civic clubs, colleges, high schools, chambers of commerce and other civic bodies. For several years he was a lecturer of the Los Angeles public school system with his talk, "Know Your Oils."

Mr. French is a member of the southern California section of the Association of Automotive Engineers, vice president of the Los Angeles Optimist Club, and president of the Los Angeles Motor Executives Club.

PERSONAL PARAGRAPHS

Sir Henri Deterding will return to the United States in April.

* * *

John Braybrook, of Petrolia, Ontario, has left to take a position in the Turner Valley oil fields.

* * *

E. W. Marland, of Ponca City, Okla., spent the holidays in New York City on pleasure and business.

* * *

Mr. and Mrs. Blake are returning to Petrolia, Ontario, after several years in the oil fields of Dutch Borneo.

* * *

L. K. Martin, former scout for the Creole Petroleum Corporation at Maracaibo, Venezuela, has returned to the United States and is visiting his parents in Wichita Falls, Tex.

Frank Barron, scout for the Gulf Production Company, has been transferred to Big Spring, Tex., to scout the area around that place.

* * *

R. C. Wilcox, petroleum engineer, Houston, Tex., has been spending a short time in New York City and other eastern points on business.

* * *

Andrei Dragulanescu, chief drilling superintendent of the Steaua Romana, Bucharest, has returned from a trip to the oil fields of the United States.

* * *

Miss Jean McDougall, of Toronto, left recently via New York for Peru where she has taken a position with the International Petroleum Company.

* * *

Robert Willetts, formerly of the Joy, Ill., Oil Company, is planning to return to the distribution of petroleum products with a new company at Joy.

* * *

John Atherton recently vacated his position as director and secretary of the Texas Oil Company, Ltd., the English subsidiary of the Texas Company.

* * *

Julius C. Miller, of the Miller & Damron Company, Kentucky, better known as the Creek Drilling Company, spent the holidays with his mother in Kansas City, Mo.

* * *

E. L. Stone, of the Lucey Products Corporation, has moved to San Antonio to take charge of the company's expansion plans in West Texas. His temporary headquarters are 1632 Milam Building.

* * *

Col. L. E. Duval, formerly with the Standard Oil Company at Shreveport, La., but for the past several years with the Lago Petroleum Corporation in Venezuela, is back in Shreveport for an extended vacation.

* * *

B. Mason, formerly with the Dixie-Gulf Gas Company at the Waskom compressor station, and in Houston, Tex., has joined The Moorlane Company, of Tulsa, as a consultant in engineering problems.

* * *

G. C. Tisdale, independent operator of Fort Worth, Tex., who has been doing considerable leasing in the new East Central Texas district, is now blocking acreage near Meridian, Miss., for a test in that area.

* * *

G. W. Furniss, who has been in Venezuela for the past 10 years with the Shell Company and was recently superintendent of the Mene Grande field, has returned to England after a two years' stay in that country.

* * *

John Hoffer, deputy supervisor of the Texas Railroad Commission with headquarters at San Angelo, made his first airplane trip last week when he visited his son, T. P. Hoffer, president of the Hoffer Oil Company, in Fort Worth.

* * *

W. C. Kneale, formerly resident geologist with The Texas Company in the Artesia district, New Mexico, has been transferred to the Fort Worth office and will serve in the capacity of petroleum engineer for the North Central Texas district.

* * *

The Vacuum Oil Company, which has had district offices at Midland, Tex., is moving back to San Angelo where it was first located when opening up the West Texas district. James Woods is in charge of the offices.

* * *

James C. Templeton, B.Sc., F.G.S., managing director of the International Geophysical Prospecting Company, Ltd., is engaged in a survey of the El Mene and Tocuyo districts of the properties of the North Venezuelan Petroleum Co., Ltd.

* * *

Leo Kaufman, formerly actively associated with the oil industry as a marketer of petroleum products in the Mid-Continent and in the East, is one of a group to organize an investment company at Houston, Tex., as secretary and treasurer.

* * *

C. L. Dobbin, of the Atlantic Oil Producing Company, Dallas, Tex., spent several days in Houston. Mr. Dobbin formerly was in charge of the Gulf Coast holdings of the company with offices at Houston but was transferred to Dallas when the Houston offices were closed.

Angus Sutherland, of the Imperial Oil Company, Ltd., staff in Turner Valley, Alberta, is visiting his family at Petrolia, Ontario.

* * *

W. Boyd Rowland, paleontologist for the Louisiana Land & Exploration Company at the Lake Charles, La., office, has resigned to accept a position with Romana Americana, and has left for Rumania where he will remain three years.

* * *

Maj. B. A. Hardey, vice president and general manager of the Moody-Seagraves properties in the Shreveport, La., district, is back in Shreveport to remain two or three months until his company begins work on the proposed Wyoming gas line.

* * *

P. J. Sonner and wife, of Winfield, Kans., are taking a delayed vacation at Hot Springs, Ark., where they motored to spend New Year's and meet relatives. Mr. Sonner plans to hunt some while there and will return to his home early in the new year.

* * *

John Gibson, formerly in the land department of the Ohio Oil Company at Shreveport, La., but now with Lion Oil Refining Company, of El Dorado, Ark., will be transferred soon after the first of the year to San Antonio, Tex., as the company's representative in that territory.

* * *

J. H. Jenkins, general manager of the producing division of the Associated Oil Company, recently left the St. Francis Hospital, San Francisco, after a month's stay, recuperating from a severe attack of appendicitis. Mr. Jenkins spent the Christmas holidays in Texas and West Virginia.

* * *

The Spartan Petroleum Company, of Chicago, has begun business with the following list of executives: President, William Jervis; vice president, Fred L. Hawekotte, and secretary-treasurer, H. Dexter Eccleston. All were at one time connected with The Texas Company.

* * *

George D. Locke, vice president in charge of sales, Barnsdall Refineries, Inc., has sailed for South America from New York. He is accompanied by Mrs. Locke. The party plans to return in March as Mr. Locke hopes to attend the annual meeting of the Western Petroleum Refiners Association that month.

* * *

G. Deschatre, representing the Schumberger Electrical Prospecting Methods, left Tulsa for Houston, Tex., on Saturday after having spent a month in the Mid-Continent fields checking wells by the electric coring method. He plans to do some work in the Gulf Coast fields of Texas and later go on to California.

* * *

Col. Robert W. Stewart, who was recently elected a director of the Indiana Limestone Association, plans to take an active interest in the work of the organization. The Indiana Limestone Association was organized about three years ago and consisted of 26 individual companies in the Indiana Limestone Field.

* * *

A. M. Sutton, formerly of El Dorado, Ark., but who has been operating in Mississippi for the past year or more, suffered fractures of the bones of his right hand and severe internal injuries in an automobile accident just outside of Shreveport, La., while on his way home for the holidays. He is recuperating at the home of his wife's parents in Nashville, Tenn.

* * *

E. O. Bennett, chief engineer for the Continental Oil Company, left Ponca City, Okla., Thursday morning, December 26, flew to Denver, Colo., and did a day's work there and was back in his office by Friday at 3 p.m. Mr. Bennett is using the airplane for most of his traveling now and this is a good example of the time saving to be accomplished by this method of transportation.

* * *

Ralph Johnson, former assistant to Herbert Smith with the Sinclair Oil & Gas Company, has been spending the holidays in Dallas, Tex., in the home of Mrs. Johnson's parents. He is now operating for himself. Before moving to Tulsa and becoming assistant to Mr. Smith, Mr. Johnson was in charge of the land department of the Sinclair company's offices at Cisco and Abilene.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

CASING SMALL GAS WELLS

If you have drilled a hole with diamond drill equipment to a depth of 500 to 700 feet and encounter gas or strike oil with sufficient gas accompanying it at pressures strong enough to raise the oil to the surface in the small drill pipe used in diamond drilling, is it necessary to retube this well with anything besides the drill pipe already in the hole?

Can this drill pipe be packed in the hole with lead wool or pig lead in a manner that will shut off water and cause the gas to be expelled through this pipe to the surface, or is it necessary to run a liner or string of small size casing in this hole to satisfactorily prepare it for producing gas or oil or both?

I would like to know also how much gas pressure it will take to raise the oil and deliver it to the surface in a 2¼-inch pipe at a depth of 500 to 700 feet.—W. S. L.

It hardly seems economical to leave high-priced pipe such as used in diamond drilling in the hole after the well is completed when it could be recovered and used for drilling other wells and cheaper tubing would be suitable for producing the gas or oil or both.

If you have good solid formation above the gas or oil sand you could run in a string of small tubing, 2½ or 3-inch diameter, and pack it off at the bottom of the hole in this solid formation. The gas and oil would then flow through it if the formation pressure in the producing horizon is sufficient to lift the oil or water to the surface.

However, if you have passed through any water sands in the hole in reaching the gas sand with only one string of pipe set and this packed at the bottom, this water would run into the well and might break through the packer and drown out the gas. For this reason it is considered good practice to run in a string of casing or a liner, back of which cement could be pumped in sufficient quantity to shut off the water from the upper sands and give a dry hole. Inside this casing or liner the producing string could then be run if the amount and pressure of the gas are not enough to flow through the casing.

The pressure required to lift oil from any depth is determined by the size of the tubing, viscosity of the oil, quantity to be produced, and ratio of submergence of the tubing in the oil to the head of oil that stands outside of the tubing in the hole. None of these factors are given by you and it therefore is suggested that you obtain a copy of "The Gas Air-Lift Pocket Book" published by Spon & Chamberlain, 120 Liberty Street, New York. It costs $2 and is written by Robert Stirling.

This book gives formulae for all of the problems you outline in your letter, and after you get it and study out your problem, it still would be advisable for you to consult some engineer or production superintendent familiar with conditions in your part of the country before you actually proceed to complete your well.

The diamond drill is suitable for drilling wells for production of oil and gas from depths to as great as 7,500 feet. In the issue of The Oil and Gas Journal for December 5, 1929, is an article, "Diamond Drills Used to Complete Wells," that may be of interest to you, although it deals entirely with high pressure wells.

RATE OF PRODUCTION DECLINE

Have any records been kept that would show how soon the production of a new oil field may be expected to start going down? Take any of the big oil fields, the Cushing and Homer Fields, for instance, doesn't the record of the production of such fields show some kind of similarity in the falling off of production that will make it possible to say how long any new field is likely to keep up its high production?—S. Y. E.

Many factors may play a part in the rate of an oil field's decline in production, such as the texture of the oil sand, spacing of the wells, time taken in drilling up the field, early intrusion of salt water, existence of curtailment agreements, etc. The history of the country's oil fields, however, does make it possible to note a semblance of uniformity in the rate of decline, most of them showing a falling off in output of 55 to 70 per cent one year after reaching their production peak. The decline is seen to be about 70 per cent on the average, at the end of two years. At three years the decline figures for the same oil fields are much more alike, usually being close to 80 per cent.

Cushing, which reached its production peak in March, 1915, showed a decline of 66 per cent at the end of the next year, 74 per cent at the end of the second year and 81 per cent at the end of the third year. Homer scored its highest output in August, 1920, and a year later the production had dropped 58 per cent, two years later 77 per cent, and three years later 85 per cent.

The average decline of 11 fields which came in after January 1, 1923, was 82 per cent after three years' production. The Wortham Field in Texas, which yielded 153,800 bbls. daily at its peak in January, 1925, was producing only 2,200 bbls. daily three years later, a drop of 99 per cent. The Powell Field in the same State sank in three years from 315,800 bbls. daily to 24,400 bbls., a decline of 92 per cent.

It can be seen from these figures that while there is likely to be a certain degree of uniformity running through the production history of fields developed under somewhat similar conditions, there is so wide a variance in individual fields that predictions as to the life of new areas would be chiefly conjecture.

RUN SALT WATER INTO WELL

According to what I have heard they are disposing of salt water in one of the Texas oil fields by running it into a specially drilled well. Can you tell me how this is done and whether it is successful?—T. O. G.

The field to which you refer is evidently the Winkler County, where operators found disposal of salt water a serious problem until they hit on the idea of piping it to specially drilled receiving wells. Describing the course followed, Jay Taylor writes as follows in "The Cementer":

"Practically all of the major oil companies in the Winkler County Field, in Texas, were faced with the problem of disposing of salt water produced along with oil in their wells. Some of the operators built huge earthen reservoirs hoping that the sun would evaporate the water. These reservoirs, however, would often fill up, run over and flood the entire lease and country with salt water.

"The Southern Crude Oil Purchasing Co. was the first to perfect an effective method to dispose of salt water. It conceived the idea of drilling a 19-inch hole to the cavity that is found in that field at 240 feet and 365 feet; to set and cement a string of 12½-inch casing on top of this cavity; then to drill out the cement plug and bridge, this well to act as a receiving well for the salt water.

"The idea was carried out and salt water from the oil-producing wells is piped directly into the casing of the receiving well. One of these receiving wells takes care of the salt water from 8 or 10 producing wells and none of them has been known to fill up. It is not an uncommon sight to see several 4-inch lead lines from various parts of a lease coming into one of these salt water receiving wells.

"Some of the operators drill a 15-inch hole and set 10-inch casing on top of the cavity, but it has been found that 12½-inch is better and, of course, will accommodate more salt water."

WHY WAS IT CALLED THAT?

HURRY-UP STICK

The name obviously comes from the use to which the device is put. The hurry-up stick is a board with a hole in one end, used to turn the T-screw at the end of the temper screw. With this implement the driller is able to reach the T-screw when the beam is in motion, thus making the operation of turning the screw more easily and rapidly performed.

LARGE PULLEYS OR SMALL?

In installing pulleys for belts in a power unit does the size of the pulleys make any difference of importance aside from the fact that the big pulleys take up more room of course? I know of course that you don't have to run the big pulley so fast to get speed as you do the smaller pulley.—S. G. N.

It is regarded as a better plan to use small pulleys and run them at high speed than to use large pulleys and run them at slow speed for the reason that the belt sticks to the pulley better and is less likely to slip if the pulleys are operated at high speed.

CORE DRILLING QUESTIONS

What is the average cost per foot for core drilling and to what depths can this be successfully carried? Would it be logical to attempt core drilling on a structure to, say, 2,500 feet to determine showings in the various formations?—H. W. S.

Cores may be taken in either of three ways, with the diamond drill, obtaining virtually perfect specimens of the formations penetrated; with the cable-tool core barrel, the core barrel replacing the standard bit at the end of the drill stem, and with the rotary, in which case a core barrel, provided with "black diamonds" or some other extremely hard cutting material, is used. The samples obtained with the cable tool core barrel by percussion are referred to as "pancakes" because of their shape. The samples obtained with the rotary bit are cylindrical and more nearly approximate those taken with the diamond drill.

It is assumed that your question refers to the diamond drill method. Use of the diamond core drill to a depth of 2,500 feet is no longer anything unusual. Besides the lighter types of diamond drills used for drilling 100 to 300 feet and driven by hand or small-powered engines, manufacturers have developed steam and air-driven machines requiring 45 to 85 horsepower for their operation. These larger machines drill holes 3 to 18 inches in diameter to a depth of 7,500 feet.

The cost of diamond drilling varies with differing conditions just as the cost of cable tool and rotary drilling varies. It would be virtually impossible to name an average cost. Some idea may be obtained, however, from the following figures taken from "Core Drilling for Structure," published by the Sullivan Machinery Co., New York:

"In 1928 and 1929 average costs on 8,600 feet of core drilling in Kansas ran 85 cents per foot, including overhead. The average depth of hole was 400 feet. Holes in excess of 1,000 feet were drilled in the vicinity of Corsicana, Tex., for an average of $1.63 per foot, including all costs. In Kansas, when the marker used is the Herrington lime, at depths of 300 to 800 feet, the costs range from as low as 65 cents to $1.10 per foot.

"In a portion of western Oklahoma structure drilling to a marker at 1,200 to 1,500 feet has shown costs ranging from $1 to $2 and even $2.50 per foot, depending on the amount of casing required."

The cost per foot increases, of course, with increasing depths.

HOW MANY KINDS OF DRILLS?

I would like to know how many different kinds of oil drills there are in use now and if there are any inventions such as the steam turbine style. If so, explain it briefly.—G. E. H.

This department is unable to tell you how many kinds of oil well drills there are in use at this time. Catalogs from all the manufacturers of this equipment would afford a fair list, but even these would fall short of completeness, for the reason that improvements to meet peculiar conditions are being added constantly. If your object is to ascertain whether a certain kind of drill which you have in mind is already covered by patent, it is suggested that you obtain through a patent attorney a full list of patents of record on these devices.

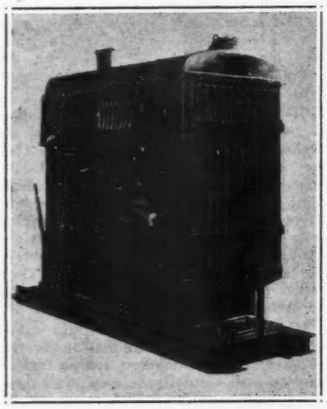
You may find of interest in this connection an article which appeared in The Oil and Gas Journal of October 24, 1929, "Russian Engineers Devise Rotary Bit."

EQUIPMENT AND SUPPLIES

OIL-FIELD POWER UNIT IS DEVELOPED BY BUDA

A new type of power unit with a base designed especially for oil-field work has been produced by the Buda Co., Harvey, Ill. This unit is said by the manufacturer to be unusually sturdy and well balanced, producing a steady flow of uniform power without vibration and with economies in operating costs.

The engine crankcase and upper half of bell housing bolt directly on to a ledge of the cast iron base. This gives support for the engine throughout its entire length and makes weaving or vibration between the engine and base an impossibility. The cast iron base serves as an oil pan and is fitted with large hand



hole plates on each side providing accessibility for inspection or adjustment of the main and connecting rod bearings.

The heavy-duty twin disc clutch is a new development brought out to meet the severe conditions in oil field service. It has an extra large friction surface for the transmission of power. Contact between the friction plates and the drive plate bolted to the flywheel is through gear teeth. This gives more contact thus reducing wear and eliminating the use of drive pins.

The radiator is supported on a cast bracket attached to the engine base and is provided with heavy bars at the front to prevent damage to the cores. The radiator core is made in sections. If a section is damaged it can be replaced.

A large diameter fan is driven from the engine crankshaft by two "V" belts. The fan is braced solidly to the engine crankcase and is provided with an adjustment for tightening the belt.

The engines operate on either natural gas or gasoline fuel, the carburetor being arranged so that by a simple adjustment either fuel can be burned efficiently.

The fully enclosed built-in governor is provided with an adjustment for two ranges in speed—one for drilling and the other for pulling tools when a higher speed is required.

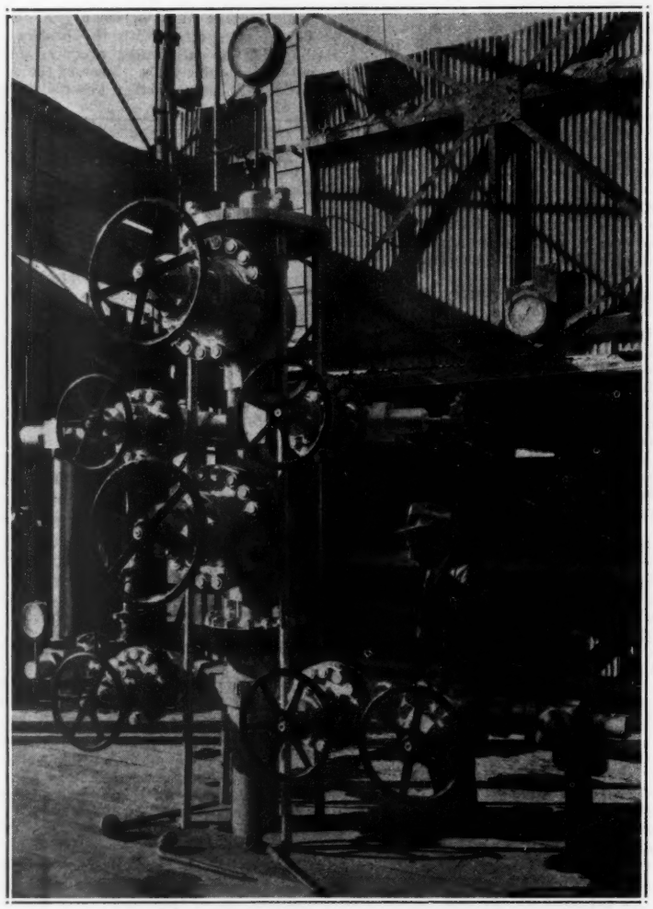
CHIEF ENGINEER FOR BROWN

The Brown Instrument Co., Philadelphia, has appointed as its chief engineer E. B. Nichols, well known for his activities in the American Society Mechanical Engineers. Mr. Nichols, who is a mechanical engineering graduate of North Carolina State College, was at one time chief engineer of the Pfaudler Co., Rochester, N. Y., subsequently holding the position of chief engineer of the Victor Talking Machine Co., Camden, N. J. Later he became associated with the Bell Telephone laboratories, which connection he severed to join the Brown Instrument Co.

REGAN DEVELOPS HOOKUP TESTED TO 6,000 POUNDS

When the first high pressure at Kettleman Hills, Calif., was tapped the engineers of the Regan Forge & Engineering Co., San Pedro, Calif., already had developed extra heavy equipment, anticipating such pressure, and now is producing a complete line of extra heavy equipment supplementing the standard pressure types.

The illustration shows a typical hookup of the high-pressure Regan tubing at Kettleman Hills with christmas tree and fittings tested as a unit to 6,000 pounds pressure. To effect a positive test, Regan



engineers test all high-pressure equipment assembled before shipment from the factory, applying 6,000 pounds pressure to the assembly rather than to the parts only. The hookup is one of several developed by Regan for Kettleman Hills service. The riser is 9½ inches outside diameter, extra heavy hydraulic tubing, with walls seven-eighths-inch thick. This heavyweight pipe connects the top flange of the casinghead in the cellar to the high-pressure tubing head shown in the photograph.

The flanges of the casinghead are drilled and the studs and bolts are of standard high-pressure series. Four-way crosses, 6⅝ by 4 inches in size are of extra heavy design, for pressures far in excess of 6,000 pounds. The casinghead ties and suspends a 16-inch surface string, an 11-inch second string and an 8⅝-inch oil string.

The tubing head is of 9-inch forged steel with male outlets, and is equipped with a combination metallic and hydraulic packing, a recent development by Regan to offer a wide factor of safety against extremely high pressure and fire. The studs are made of alloy steel. Two 6⅝-inch and five 4½-inch 6,000-pound test valves complete the hookup. A plate flange is set at the top of the christmas tree for connection with bolted trusses which extend to the landing flange below the casinghead, offering rigid support.

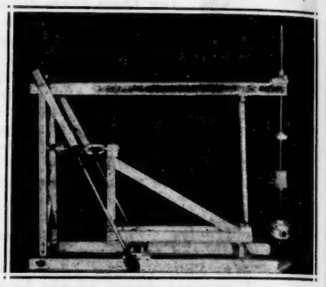
Three classifications of Regan tubing and casing control equipment are available for different pressures, as follows: Class A, for standard pressures; Class B for pressures ranging up to 3,000 pounds; Class C for pressures ranging to 6,000 pounds.

DIESEL OFFICERS ELECTED

The Diesel Engine Manufacturers' Association has elected the following officers for 1930: President, A. E. Ballin, McIntosh & Seymour Corp., Auburn, N. Y.; vice president, George Codrington, Winton Engine Co., Cleveland, Ohio; chairman, executive committee, E. T. Fishwick, Worthington Pump & Machinery Corp., New York; chairman, technical committee, H. W. Dow, Nordberg Manufacturing Co., Milwaukee, Wis.; secretary and treasurer, H. A. Pratt, Ingersoll-Rand Co., New York. This association, getting into active operation in 1929, agreed upon engineering standards designed to be of help to buyers.

ALL-STEEL JACK FRAME OF STRAIGHT-LIFT TYPE

The Texas Steel Co., Fort Worth, Tex., has placed in operation a new all-steel straight-lift jack frame, to be used with



any No. 2 or No. 3 Oklahoma pattern pumping jack. To simplicity and convenience this frame adds the simplicity straight-lift feature. The straight-lift while adding no weight and requiring no more labor either in setting up or laying down, is designed to prevent excessive wear on the stuffing box and polish rods.

TRADE LITERATURE RECEIVED

The January number of the Fusion News, published by the Fusion Welding Corp., Chicago, contains an interesting article on the procedure followed in welding the world's longest oil-carrying pipe line, the Texas Empire line from Cushing, Okla., to East Chicago, Ind.

Bristol's recording gauges for pressure and vacuum are the subject of an illustrated loose-leaf catalog prepared by the Bristol Co., Waterbury, Conn. All ranges of pressure from full vacuum to 12,000 pounds per square inch are taken care of by the devices described.

The new catalog of the Wieman-Kammerer-Wright Co., Inc., Hollydale, Calif., pioneer makers of rotary drilling equipment, contains information regarding every W.K.W. product and its use. The catalog is in loose-leaf form, four pages being devoted to each product.

Uses of hard facing to prevent rapid abrasion are covered in a 14-page catalog recently published by the Blackor Co., Los Angeles, Calif., manufacturer of Blackor hard facing. The book is profusely illustrated and contains information of value to anyone with abrasion problems.

Several articles of immediate interest to the oil industry appear in the current number of Fusion Facts, published by the Stoody Co., Whittier, Calif.

Robbins & Myers, Springfield, Ohio, are distributing a bulletin devoted to the R&M improved electric hoists. Detailed specifications and illustrations showing the general design are given.

Fans for warm air furnaces are described in a new bulletin issued by Wagner Electric Corp., St. Louis, Mo. The bulletin discusses the advantages of installing furnace fans in the cold air intakes of warm air furnaces.

Oil companies operating in Venezuela have built golf courses so that their field men may play without traveling great distances, says the December-January number of the Lufkin Line, published by the Lufkin Foundry & Machine Co., Tulsa and Houston.

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CONTINENTAL

Natural Gas Developments

NATURAL GAS IN EAST FOR SPECIAL PURPOSES

By Alexander Forward
Managing Director, A. G. A.

"Modernism" has marked the development of the American gas industry of the past few years, and particularly was this true of the year 1929. Through the vigorous pursuance of its program of research, the industry has dissipated many of the popular notions of hazards of the business and developed in their stead many new uses for gas fuel in industry and the homes of the nation. This trend to modernity is evidenced by the hundreds of domestic appliances, dressed in the latest styles and colors, to match any scheme of household decoration as well as to render a more efficient degree of utilitarian service; in the adaptation of gas to scores of new industrial, commercial and domestic uses, revolutionizing the ceramic industry, brass melting, baking, refrigeration, central heating and hotel cooking; the testing of upwards of 15,000 appliances in the laboratory of the association at Cleveland, in the interest of the protection of the public and the industry against faulty and inefficient gas burning appliances; the modernization of scores of manufactured gas plants and the extension of hundreds of miles of great pipe line systems bringing natural gas from the enormously productive areas of the Southwest and West to hundreds of communities that never have heretofore enjoyed the conveniences of this fuel.

The year 1929 will mark an unprecedented advance in all divisions of the industry. Although sales of gas for domestic purposes other than house heating showed a normal increase of somewhat more than 4 per cent, the use of gas for household heating purposes registered an increase of over 50 per cent, while consumption of gas for industrial commercial purposes, such as factories, hotels, restaurants, etc., was nearly 12 per cent above 1928 figures.

Preliminary estimates of sales by manufactured gas companies in 1929 indicate an 8 per cent increase over 1928.

Growth in the natural gas industry, according to preliminary estimates indicates production of 1,890,000,000,000 feet in 1929 as against 1,568,000,000,000 feet in 1928, an increase of 20.5 per cent. This branch of the industry increased its gross operating revenues in 1929 to $450,000,000, an increase of 23.6 per cent over 1928 which showed gross operating revenues of $364,000,000.

It is not expected that natural gas will be substituted for manufactured gas in the East, because of the large supply which would be required for such a move and because it would necessitate scrapping efficient by-product gas plants. It is expected that this natural gas will be used by large industrial consumers who have a particular need for the high heat content of this type of gas and that it will also be purchased by manufactured gas utilities to enrich their own manufactured product. Mixed natural and manufactured gas is now generally considered to be the most economical way to distribute both products as it reduces the expense of manufacturing gas and provides for a financial return on the sale of the natural gas more in line with its high heat content than when this gas is distributed in an unmixed form.

The gas industry now is pushing research. It has made marked progress in refrigerating and heating, but believes the surface hardly has been scratched in other fields. Some of the revolutionary changes of an engineering character scheduled to come in the industry include the combining of gas, steam and electrical production in single plants where coal will be completely processed, the development of a gas-fired turbine for the generation of electricity which may make possible the locating of future combination utility plants at the coal source or mine mouth, thereby eliminating heavy investment costs.

NATURAL GAS SURVEY MADE IN MUSKEGON, MICHIGAN, FIELD

By Special Correspondent

MUSKEGON, Mich., Jan. 4.—Enough natural gas to supply the demands of nearly 10,000 domestic and commercial consumers of Greater Muskegon is going to waste daily in the Muskegon oil field but there is no profitable way for any pipe line to gather and save it for Muskegon residents, according to a survey just completed.

Casinghead gas from less than 25 per cent of the 320 producing oil wells in the field is being separated from the oil and used for purposes other than operating gas engines or steaming plants on leases in the field. About 2,000,000 feet of casinghead gas is escaping daily into the air as producing oil wells are on the pump and not depending upon the gas flow to force the oil into the field tanks.

The trouble in the Muskegon Field is that there is no assurance how long the present production may continue from present known pay sands. Although many wells seem to be making a greater flow than 10,000 feet a day the openings through which the gas is allowed to escape are small and there is only a period of a few hours a day when the wells have been pumped off that they make any amount of gas.

The West Michigan Consumers Co. has a compressor station with a capacity of about 3,000,000 feet a day in the Muskegon Township area and is piping casinghead gas from more than 50 pumping wells of the Dixie Oil Co., the Muskegon Oil Corp., and associated companies.

A large percentage of the comparatively small amount of casinghead gas which is being produced in the field is being used to operate the pumps, to generate steam for treating oil in which there is too great a percentage of water for immediate acceptance by the oil pipe lines and for use by the residents on leases throughout the field.

Some gas also is being used for drilling purposes as there are still 10 to 15 rigs operating continually throughout the field. In some instances rigs recently have been forced to shut down or resort to coal for fuel to heat the boilers and keep the drill in motion.

There are few places in the field where there is any amount of waste gas available at any one well or group of wells so located as to make it profitable to take the gas.

Casinghead gas passing through the Bell Gasoline Corp.'s natural gasoline plant has been turned into a line to the West Michigan Consumers Co. plant and is being compressed and sent out to industrial consumers in Greater Muskegon.

In connection with the survey of the field it was discovered that of 36 wells still listed as dry gassers, 7 have been completely drowned out by salt water and are dead. None of the remaining 29 wells still considered dry gas producers are delivering more than 1,000,000 feet a day into the pipe line and many are making less than 500,000 feet a day for sale through one of the four existing pipe lines.

The best gas wells in the field today are three lower Traverse producers of the Dixie Oil Co. and Lima Oil Corp., on the Muskegon River flats in Section 9, Muskegon Township. The Muskegon Traction & Lighting Co. is getting about half of its daily sendout to the domestic and commercial users of Greater Muskegon from the Lima corporation's two

(Continued on Page 168)

SEAGRAVES PREDICTS NEW GAS PROSPERITY

HOUSTON, Tex., Jan. 6.—At the outset of 1930, the natural gas industry shows no slackening of the high rate of activity and expansion that has marked its progress during 1929. The coming 12 months should witness further significant improvement in the industry and the opening of numerous new markets served by long-distance pipe lines, was the gist of a statement made by O. R. Seagraves, president of the United Gas Co.

"Ten years ago the natural gas industry virtually was localized in the regions surrounding the Ohio Valley," Mr. Seagraves continued. "Today it has progressed to a leading position among public utilities in most of the important sections of the country, in many of which it has displaced or is affording increased competition to artificial gas.

"The development since the war of vast natural gas fields in the southwest, principally in Texas, Oklahoma and Louisiana, has caused the production of natural gas to increase considerably faster than artificial gas. Based on best present estimates, gross revenues of natural gas companies for 1929 will exceed $400,000,000 compared with $196,000,000 in 1920, an increase of 104 per cent for the 10 years. For the same period sales of manufactured gas will show an estimated increase from $333,000,000 to $550,000,000, or 65 per cent. Natural gas production has doubled within the past six years, increasing from 762,000,000,000 feet in 1922 to 1,568,000,000,000 feet. Last year's production of artificial gas amounted to slightly less than one-third of the latter volume.

"The construction of large, high-pressure pipe lines for transporting natural gas to distant new markets has been the principal cause for the recent growth of the industry. The past year has probably witnessed more of this expansion than any previous year, with the completion of major pipe lines to St. Louis, Kansas City, Memphis, New Orleans, San Antonio, Monterrey (Mexico), Salt Lake City, Ogden, San Francisco and Oakland.

"In the year just ahead this expansion is scheduled to continue at about the same rate. It is expected that a minimum of $250,000,000 will be expended for new developments in 1930, increasing the total investment in the natural gas industry to $2,150,000,000. New lines to be completed during the next 12 months are those projected to Atlanta, Birmingham, San Francisco, San Diego and a number of others.

"Natural gas sales of 1,750,000,000,000 feet or more are indicated for 1930. Many of the large industrial plants of the Southwest now are using crude oil as fuel because of the present low cost. Further curtailment of overproduction of oil and improvement in crude prices should induce such industries to change to natural gas for their fuel needs."

LOUISIANA GAS PRODUCTION

SHREVEPORT, La., Jan. 6.—Gas production in Louisiana for the first 10 months of 1929 amounted to 210,900,703,971, feet according to figures released by the Minerals Division of the State Department of Conservation. Of the total production, 85 to 90 per cent was from the Monroe and Richland Parish Fields. During the first eight months of the year, 68,649,698,734 feet went through carbon plants from which there was produced 86,815,177 pounds of black after 7,582,432 gallons of gasoline had been extracted, leaving 89,270,864,563 feet for pipe lines serving domestic and industrial consumers in Louisiana and adjoining states.

TUNIS SUCCEEDS WEEKS

Howard F. Weeks, for the past four years editor of the A. G. A. Monthly, and for several months secretary of the publicity and advertising section, has resigned to join the Consolidated Gas Co. of New York. He will be succeeded by A. B. Tunis, secretary of the Virginia Public Utilities Association, Richmond, Va., and director of the Virginia committee on utility information.

Mr. Weeks is also treasurer of the Public Utilities Advertising Association. Mr. Tunis has had varied experience in editorial and publicity work. His first work was on the Ledger-Dispatch at Norfolk. Later he became city editor of the Times-Dispatch at Richmond; for two years was on the copy-writing staff of an advertising agency, and for five years was agent of the public relations department of the Chesapeake & Ohio Railway, editing its employe magazine. Mr. Tunis has been connected with the Virginia Utilities Association since January, 1928.

FORT WORTH GAS CO. READJUSTS ITS RATES

FORT WORTH, Tex., Jan 6.—The Fort Worth Gas Co. has raised its rates on gas from 6¾ cents per 100 feet to 16.67 cents per 100 feet for the first 700 feet consumed monthly on one meter, effective December 31, 1929. For the next 19,300 feet of monthly consumption the rate is lowered to 7.50 cents per 100 feet, and the next 10,000 feet of monthly consumption registered on one meter lowers it to 7.23 cents per 100 feet. A minimum charge of 50 cents net per meter per month will be made even though the customer may not have used sufficient gas to make the bill equal 50 cents. A deduction of 10 per cent will be allowed for payment within 10 days.

The gas company has been trying to raise the gas rates in Fort Worth since August, 1927, but the city council has been opposing it.

MADILL, TISHOMINGO HAVE GAS

Natural gas has been turned into new distribution systems in Madill and Tishomingo by the Standard Gas Co., of which Wilbur J. Holleman, Oklahoma City, is president, and S. M. Williams, Jr., Tulsa, is vice president. The Oklahoma Natural Gas Corp. is supplying the gas through 26 miles of line extending eastward from Ardmore and connecting with 16 miles of line constructed by the Standard Gas Co. The latter company is a subsidiary of the Utility Gas Co., which controls properties in Kansas and Oklahoma.

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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

HYDROCARBONS IN NATURAL GAS

What are the hydrocarbons that are found in natural gas? Information is especially desired about the quantity of the heavier hydrocarbons that are present. Does the composition of natural gas vary to a considerable extent?—R. C. M.

Natural gas because of the very fact that it is a gas at ordinary temperatures cannot vary in composition to any great extent. It is not like oil, as found in different parts of the world, which occurs in many forms, from a black and very heavy almost solid material to a colorless and very light liquid, and these contain a wide variety of chemical compounds.

Some natural gas is practically pure methane, which is the lightest hydrocarbon found. The percentage of methane decreases as the quantity and number of the other hydrocarbons increase. A recent paper by H. C. Allen, Ind. Eng. Chem., Anal. Edn., Vol. 1, Page 226, contains some analytical data on this subject.

"Although the natural gasoline industry has been in existence a good many years, it has been only the last year or two that real efforts have been made to determine the exact composition of the gases from which the gasoline has been obtained. The actual composition of each raw gas shows a rather regular decrease as we pass from the methane to the higher hydrocarbons, but this is not true in all natural gases, as some have been examined that show more hexane than pentane present. In work done at the University of Kansas heptane is the highest hydrocarbon that has been determined in natural gases, but traces of octane have been detected."

A table giving the composition of three different gases is shown. The analysis reporting the largest quantities of the heavier hydrocarbons is quoted.

Constituent—	Raw gas per cent
Methane	41.4
Ethane	24.4
Propane	16.7
Butane	6.8
Pentane	4.9
Hexane	1.2
Heptane	0.1
Carbon dioxide	0.7
Residue	3.8
B.t.u. per foot	1755
	Lbs. per 1,000 cu. ft.
Propane	19.43
Butane	10.44

LUBRICATING OILS' STRUCTURE AND QUALITY

Are certain combinations of elements known to be required for good lubricating oils? Is it necessary for high quality that some definite class or groups of substances make up the base in order to have a crude oil with lubricating possibilities?—J. H. O.

Lubricating oils are made from many different varieties of petroleum, and the oils of the world are so complicated in their chemical structure that it is difficult to classify them on the basis of composition. Probably the more often used classification is into four types: Paraffin, asphaltic, naphthenic, and mixed base oils. Lubricating oils are made from all of them. The oils free from wax produce lubricating oils with a low pourpoint, but even this characteristic may be a matter possible to control by the method of manufacture. The usual method for testing the possibilities of an unknown crude oil for lubricating quality is viscosity; this test being made on the lubricating cut obtained from the crude oil by distillation.

Mineral lubricating oils, like all other petroleum distillates, are composed of groups which contain only carbon and hydrogen, while the vegetable oils that are used to some extent as lubricants contain in addition the element oxygen. The viscosity of petroleum fractions increases with carbon content and most lubricating oils contain more than 15 carbon atoms. The tendency of vegetable and animal oils to form gum and acids is due to the presence of oxygen. This tendency is absent from a pure mineral lubricating oil.

While most of the lubricating oils of high viscosity contain olefines and naphthenes, it is not true that all such hydrocarbons are lubricants. Quoting from Gurwitch-Moore, Petroleum Technology, Page 138: "The relation of the internal friction of oils to their chemical composition is an interesting question which has not been adequately elucidated up to the present time. It may be taken as a general rule that it generally increases with the molecular weight in the homologous series. It also seems that the rule may be deduced from the data to hand in the literature, that, if the same number of carbon atoms are present in the molecule the naphthenes have the greatest viscosity, and then, in diminishing order, the aromatic and the paraffin hydrocarbons the olefines and diolefines. The chemical structure of the compounds plays here a considerable role, besides their classification in a certain homologous series." A further discussion may be found at the place quoted.

SOLVENTS FOR SEPARATING WAX AND OIL

What liquids are used for extracting wax from oil by the solution process? If you can give me a list of these or tell me where to obtain the information your help will be appreciated.—M. S. G.

The general principles of the methods for the solvent extraction of paraffin wax were discussed in an article by J. W. Poole in The Oil and Gas Journal, September, 26, 1929, Page 99.

Sullivan, McGill and French, Solubility of Paraffin Wax in Oil, Ind. Eng. Chem. 19, p. 1,042, in investigating the solubility of paraffin wax in Mid-Continent oils, came to three conclusions, all of which are important:

1. The solubility of wax in oil increases as the melting point of the wax decreases.

2. The solubility of paraffin wax in oil decreases with increasing viscosity of the solvent.

3. Difference of soluibility due to difference in melting point of wax decreases with decreasing temperature.

In another place, Ind. Eng. Chem., Vol. 21, Page 1,098, Poole reports the solubility of wax in several different solvents, together with some details of temperature. Substances considered of little value, because of their tendency to combine with the oil, included tetrachlorethane, ethylene, dichloride, and carbon tetrachloride. The higher alcohols, especially amyl alcohol, seemed to give promise. Somewhat favorable results were indicated with chlorobenzene, methylethyl ketone, butaldehyde, and amyl acetate.

Poole states that acetone is a poor solvent for either wax or oil, and the large volume, compared with the oil, that would be necessary is important. Low temperatures are indicated, as the solubility of the wax increases much faster than that of the oil above 30° C. and they become equal at about 50° C. Butanol has good selective properties, oil dissolves in it just below 30° C., and at 0° C. dissolved about one-third its weight of oil. Up to 25° C. the solubility of the wax is below 2 per cent and at 30° C. is less than 4 per cent.

Ethyl acetate also has selective action for oil over wax and is similar to butanol, except that at up to 25-30° C., the oil is less soluble than in butanol, and that the increase in solubility of the wax comes at a lower temerature than for butanol. Butyl acetate, chlorobenzene and toluene are all miscible over the range tested, i.e., up to about 40° C., and at 20° C. butyl acetate has its greatest selectivity which might prove it to be the most satisfactory solvent.

CARBON MONOXIDE BY IODINE PENTOXIDE METHOD

What is the principle used for determining carbon monoxide by iodine solution? Where will I find a description of this method?—L. B.

The determination of the quantity of carbon monoxide present in the products of combustion is important as a criterion of the completeness of combustion and of the safe operation of gas appliances. The apparatus for this purpose is the U. S. Bureau of Standards modification of one designed and used by the Chemical Warfare Service during the World War. The method is based on the reaction of carbon monoxide and iodine pentoxide which results in the liberation of iodine and the formation of caron dioxide. The liberated iodine is absorbed in a 10 per cent solution of potassium iodide and the quantity determined by titration with standardized sodium thiosulphate. As the quantity of liberated iodine and the volume of gas passed through the apparatus are known, the quantity of carbon monoxide in the products of combustion may be calculated. Because the samples usually contain various quantities of excess air it is necessary to compute the results to an air-free basis in order to compare various tests. The quantity of excess air may be judged by determining free oxygen, but it is usually more convenient in routine work to determine the quantity of carbon dioxide and the total volume of products, including nitrogen, formed by the combustion of a unit volume of gas, and subsequently determine only carbon monoxide and carbon dioxide in the samples tested.

The details of the method may be found in Gas Chemists Handbook, American Gas Association, 420 Lexington Avenue, New York, from which the description above has been adapted. Additional references are: Carbon Monoxide in Air Contaminated With Motor Exhaust Gas, by M. C. Teague, Ind. Eng. Chem., 1920, Page 964. Detection of Carbon Monoxide, by C. R. Hoover, Ind. Eng. Chem., 1921, Page 770.

USE AND PRICE OF PETROLEUM COKE

Will you please be so kind as to advise us in detail what you know about the usage and prices of petroleum coke?—P. W. B.

The most extensive use that is made of petroleum coke is as industrial and domestic fuel. Its high heating value, freedom from clinker-forming substances, the small quantity of ash, and the low sulphur content make it a desirable fuel in many metallurgical industries. The lump and briquette forms serve as a convenient domestic fuel which is quite popular in many sections of the country. The industrial plants reduce petroleum coke to the powdered form for use as a fuel under boilers and stills. In many instances it has been reported that pulverized coke is being used as a fuel to better advantage, with respect to cost and efficiency, than coal or fuel oil.

Minor uses include insulating material for refrigerators and the preparation of carbon products, such as polishing compounds and electrodes. The petroleum coke suitable for these purposes should be selected so that it will be free from soft particles and iron scale. This iron scale is an occasional contamination introduced from the shell of the still or chamber where the coke is formed. Carbon is used by the smelters to aid in the chemical reaction necessary for the reduction of many different ores. Petroleum coke supplies a pure form of carbon for this purpose.

The selling price of petroleum coke may vary from $2 to $12 a ton. This wide range may be explained as being due to a combination of supply, demand and transportation expense.

HYDROGENATION OR BERGIUS PATENTS

A friend has asked me to find out the patent number of the I. G. Farben patent covering their hydrogenation process which they sold to the Standard Oil Co. (New Jersey). If you are able to give me any information regarding this it will be greatly appreciated.—F. G.

A large number of foreign patents have been granted to Bergius and associates which relate to the hydrogenation of coal and other carbonaceous materials. The United States patents, of which we have record, are the following:

No. 1,251,954—To F. Bergius and J. Billwiller, Process for Producing Liquid or Soluble Organic Combinations From Hard Coal and the Like, January 1, 1918.

No. 1,342,790—To F. Bergius, Process of Hydrogenating Carbon Compounds, June 8, 1920.

No. 1,344,671—To F. Bergius, Process for Obtaining Light Hydrocarbons From Heavy Hydrocarbons, June 29, 1920.

No. 1,391,664—To F. Bergius, Process of Hydrogenating Carbon Compounds Under High Pressure and Elevated Temperature, September 27, 1921.

No. 1,592,772—To F. Bergius, Process for Treating Carbon and Carbon Compounds Under Heat and Pressure, July 13, 1926.

No. 1,607,939—To F. Bergius, Process for Hydrogenating and Cracking Hydrocarbons, Carbonaceous Matters, and the Like, November 23, 1926.

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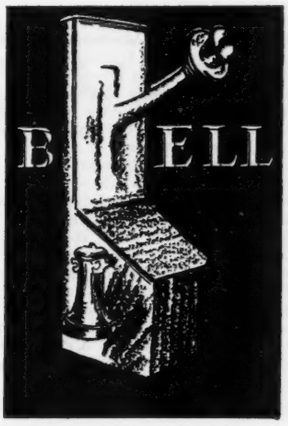

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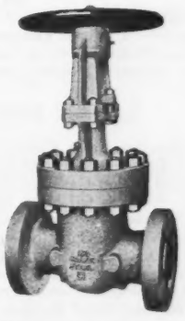
Beginning before the oil age began, the growth of Crane Co. is a significant parallel to the growth of the oil and gas industries. From a one-man shop founded in 1855, it has become a world organization, meeting piping needs in every oil and gas field, wherever a refinery is located, wherever oil and gas are sold and used.

Supplying valves and fittings for every gas and oil purpose, it has met each new need as it has arisen, effecting economies and bettering production in over a hundred ways.

Now in its 75th anniversary year, it places at the disposal of oil and gas men all the materials developed, the knowledge and experience gained. Confident of future progress as marked as that of the past, it dedicates its research, its exact methods, its recognized quality, to the task of meeting the demands that this progress will bring. It invites you to bring your piping problems, with assurance of whole hearted co-operation toward their solution.

1855
SEVENTY-FIFTH
ANNIVERSARY
1930

This cast iron valve, one of the earlyones manufactured by Crane Co., would control pressure of 125 pounds. Note the square body.



This Series 150 Crane cast steel valve of today will control oil pressures of 1350 pounds at temperatures of 900° F. Its alloy steel has a tensile strength of 110,000 pounds. The disc and seat rings are of exelloy. Note the rounded body. In metals, design, every detail the years have brought improvement.

CRANE

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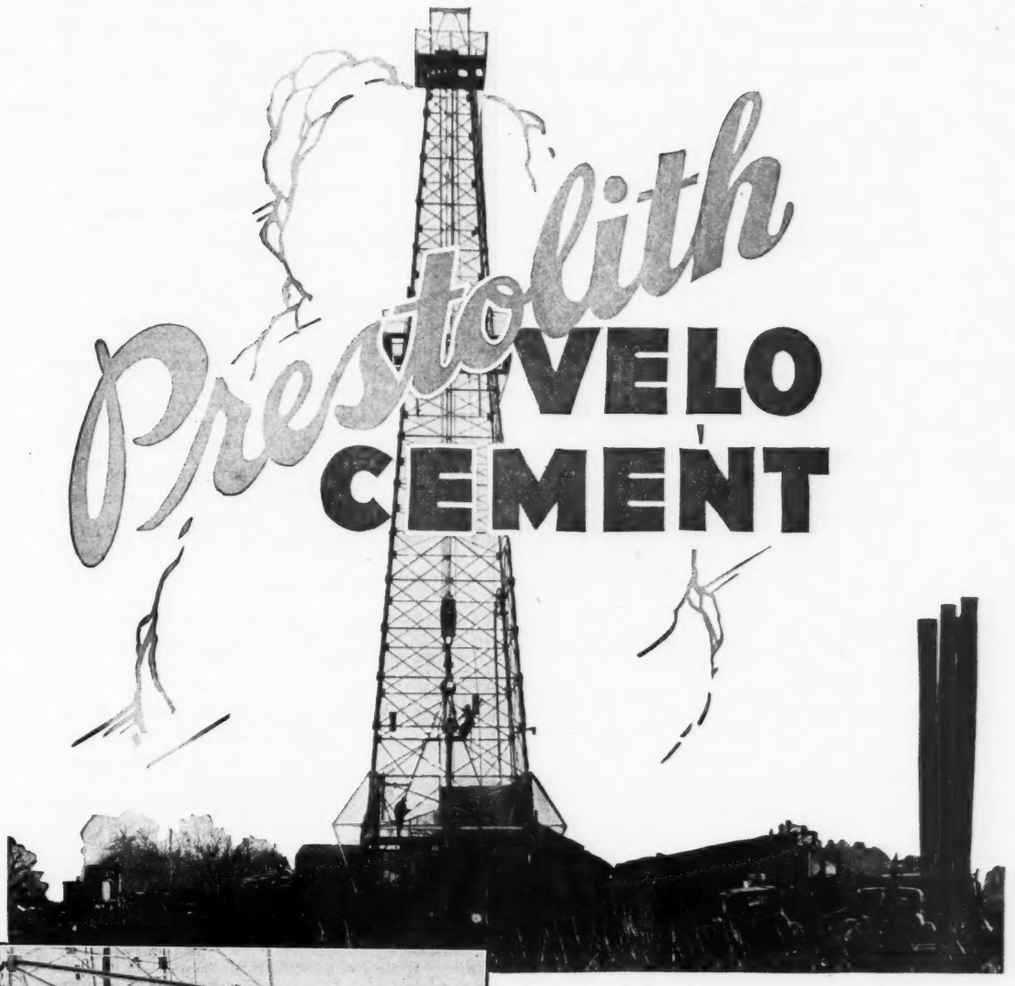

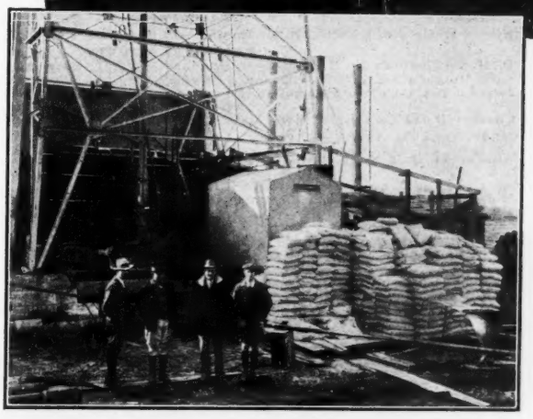

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 53)

FRANKLIN PARISH

Davis et als' No. 1 Moore, 600 ft. W, 200 ft. S, NE cor. Sec. 12-11-6 ..... S.D. 1,430 ft.
Franklin Oil & Gas Co.'s No. 1 T. J. O'Brien, 300 ft. N, 300 ft. E. SW cor. NW Sec. 17-15-9 ..... Cmtd. 15½-in. 208 ft.

LA SALLE PARISH—WHITE SULPHUR DISTRICT

Tunica Pet. Co.'s No. 52 L. & A., 660 ft. N, 660 ft. W, SE cor., Sec. 17-7-2e ..... Drlg. 1,600 ft.

MOREHOUSE PARISH

J. P. White's No. 1 Chess-Wymond, Sec. 32-19-6 ..... Tested S.W. 3,025 ft.; W.O.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 300 ft. E. 350 ft. N. C Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 8 ft.; S.D. for orders; T.D. 2,536 ft.

Nichols & Wilder's No. 1 Clark, 150 f.. W, 250 ft. N. SE cor. Sec. 10-10-8 ..... S.D. 2,110 ft.
Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E. SW cor. SE, Sec. 7-8-9 ..... S.D. 867 ft.

OUACHITA PARISH

J. L. Bullock, trustee's No. 1 West Va. Lbr. Co. N½ NE, Sec. 25-18-5 ..... Drlg. sandy shale 2,630 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E. SW cor. Sec. 9-5n-2e ..... S.D. 2,530 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. S. NW cor. Sec. 32-14-10 ..... S.D. 1,515 ft.
Eylers O. & G. Co.'s No. 1 Johnson, 500 ft. N, 500 ft. W. SE cor. SW Sec. 17-12-10 ..... Drlg. 2,800 ft.
LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.
D. H. Riddick's No. 1 Johnson, 500 ft. N, 500 ft. W, SE cor. Sec. 17-12-10 ..... S.D. 1,050 ft.; laying gas line.

RICHLAND PARISH

Richland O. & G. Co.'s No. 1 Singleterry, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18-7 ..... S.D. 970 ft.
Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E. SW cor Section 13-17-5 ..... Derrick.
Austin & McDonald's No. 2 Millsaps, SW cor. Sec. 17-17-6 Waiting orders; T.D. 2,679 ft.
Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E. NW cor. Sec. 16-17-6 ..... Tested S.W.; W.O. 2,477 ft.
Austin & McDonald's No. 4 Millsaps, NW cor. Sec. 16-17-6. Location.
Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor. Sec. 8-17-6 ..... Derrick.
W. C. Feezel's No. 1 Landrum, 620 ft. N, 4,572 ft. E. SW cor. Sec. 6-16-7 ..... Derrick.
Industrial Gas Co.'s No. 1 T. R. Hodge, 3,259 ft. E, L. 320 ft. S. C. Sec. 7-16-7 ..... Arranging D.S. test; T.D. 2,666 ft.

Industrial Gas Co.'s No. 1 A. T. Davidson, 1,856 ft. S. 916 ft. E. NW cor. Sec. 6-16-7 ..... Coring 2,614 ft.
Industrial Gas Co.'s No. 1-A Jack Davidson, N 1deg. W. 1,094 ft. S. 2,561 ft. E. NW cor. Sec. 6-16-7 ..... Setting siphon 2,470 ft.
Industrial Gas Co.'s No. 1 Ruston Drlg. Co., 1,980 ft. S. 1,955 ft. E. NW cor. Sec. 7-16-7 ..... Drlg. rock 2,447 ft.
Palmer Corp.'s No. 2 Miles, 723 ft. E. 660 ft. S. NW cor. NE, Sec. 12-17-6 ..... Cmtd. 6-in. 2,315 f..
Shreveport Contractors, Inc.'s No. 1 Buie, 600 ft. E. 400 ft. N. SW cor. Sec. 17-15-7 ..... S.D.; shale and boulders 2,527 ft.
Triangle Drlg. Co. and Woodley Pet. Co.'s No. 1 G. L. Cumpton, 660 ft. S, 660 ft. W, NE cor. NW SE Sec. 16-17-7 ..... Tested dry 2,492 ft; W.O. 2,495 ft.
Woodley Pet. Co.'s No. 1 Buie, 660 ft. N, 1,980 ft. E. SW cor. Sec. 32-18-7 ..... S.D. 2,527 ft.

SABINE PARISH

Bridges-Clark Oil Co.'s No. 1 Gay et al, 300 ft. S, 300 ft. E. NW cor. NE NW, Sec. 3-9-12 ..... Rigging up.
R. L. Gay, trustee's No. 6 Bowman Hicks, 900 ft. N, 800 ft. W, SE cor. NW SE Sec. 14-7-14 ..... Began drlg. Dec. 30; cmtd. 10-in. 62 ft.
R. L. Gay, trustee's No. 2-A Bowman-Hicks Lbr. Co., 300 ft. S, 200 ft. W, NE cor. NE NW ..... Rigging up.
R. L. Gay, trustee's No. 3 Sabine Lbr. Co., 1,120 ft. N, 200 ft. E. SW cor. Sec. 13-7-14 ..... Drlg. gummy shale 1,412 ft.
Haynes Bros.' No. 1 Dover, 1,120 ft. W, 200 ft. N, SE cor. NE, Sec. 28-8-12 ..... Rigging up.
G. M. LeGrand's No. 1 A. C. Haley, 1,020 ft., 3,300 ft. E. NW cor. Sec. 6-7-12 ..... Drlg. shale 2,070 ft.
Ohio Oil Co.'s No. 1 Bowman-Hicks, 320 ft. S, 330 ft. E. NW cor. NW SW, Sec. 35-8-12 ..... Began drlg. Dec. 26; cmtd. 10-in. 213 ft; drlg. 940 ft.
Ohio Oil Co.'s No. 2 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 33-8-12 ..... Began drlg. Dec. 28; drlg. 100 ft.
Olsen Brothers' No. 1 Keeler, SW cor. SW SE Sec. 27-8-12. Top chalk 2,538 f.; tested dry 2,370 ft; coring chalk 2,393 ft.
D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N. SW cor. NW SE Sec. 18-9-12 ..... Drlg. 2,040 ft.
Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W. NE cor., Sec. 4-7-12 ..... Derrick.
Ruston Drlg. Co.'s No. 1 Holliday, 330 ft. N, 330 ft. E. SW cor. NW, Sec. 35-8-12 ..... Derrick.
Sabine O. & G. Co.'s No. 1 Anderson, 200 ft. N, 200 ft. E SW cor. SW NW Sec. 19-18-13 ..... Top chalk 2,190 ft; drlg. 2,263 ft.
A. H. Tarver's No. 2 Long Bell, 800 ft. N, 800 ft. W, SE cor. SW Sec. 18-8-13 ..... Cmtd. 8-in. 1,860 ft; top broken chalk and shale; T.D. 1,962 ft.
A. H. Tarver's No. 1 Sabine State Bank, 250 ft. N, 250 ft. W, center Sec. 27-8-12 ..... Rigging up.
Tippett Drlg. Co.'s No. 1 Hughes, 200 ft. S, 200 ft. E. NW cor. SW NW, Sec. 36-8-12 ..... Derrick.

UNION PARISH

Fred Stovall's No. 1 Stovall, 1,820 ft. E, 350 ft. N, SW cor. Sec. 32-23-4 ..... Rig up.

WEBSTER PARISH

F. M. Fuller's No. 1 Monzingo, 200 ft. N, 200 ft. W, SE cor. Sec. 27-18-8 ..... Began drlg. Nov. 10; cmtd. 10-in. at 62 ft.
Paul C. Warren et als' No. 1 Martin, 305 ft. N, 212 ft. E. SW cor. Sec. 20-20-9 ..... Show gas top Nacatoch; 1,759 ft. S.D.

WEST CARROLL PARISH

Palmer Corp.'s No. 1-A Marston, 1,320 ft. S, 89 deg., 35 min. W, 1,320 ft. of SE cor., Sec. 11-19-10 ..... Began drlg. Dec. 21; drlg.

ARKANSAS

ASHLEY COUNTY

Ark. Fuel Oil Co.'s No. 1 Crossett Lbr. Co., 330 ft. E. 330 ft. S. NW cor. Sec. 1-19-7 ..... Drlg. lime 2,718 ft.

CLARK COUNTY

Wm. Henry trustee's No. 1 Clark, Sec. 34-9-21 ..... S.D. 1,200 ft.

CLEBURN COUNTY

Cosden Oil Co.'s of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E. NW cor. SW SE Sec. 19-9-10 ..... Cmtd. 15½-in. 437 ft; straightening hole to 470 ft; T.D.
Donnelly-Craver et als' No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Began drlg. Dec. 30; drlg.

COLUMBIA COUNTY

Parker and others' No. 1 Franks, 320 ft. S, 330 ft. W C Sec. 25-19-22 ..... S.D. 2,835 ft.
Williams et als' No. 1 Fullenwider, 200 ft. N, 600 ft. E. SW cor. NE SE, Sec. 12-17-22 ..... Location.

DREW COUNTY

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-6 ..... Drlg. 1,810 ft.

FAULKNER COUNTY

Gold Creek Oil & Gas Co.'s No. 2 Stermer, SE cor. NW SE Sec. 17-4-13 ..... Began drlg. Dec. 12.

GARLAND COUNTY

Givens et als' No. 1 Garrett, 660 ft. S, 660 ft. W, C Sec. 1-3-19 ..... Reaming to bottom; T.D. 3,388 ft.

GRANT COUNTY

Jones & Watkins' No. 1 Meek, Sec. 5-4-11 ..... S.D. 1,400 ft.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ..... Cored 4-ft. sand 2,034 ft; W.O.
McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE Sec. 12-13-28 ..... S.D. 1,805 ft.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C Sec. 11-14-28. Tested 250,000 ft. gas 63 ft; S.D.

OUACHITA COUNTY

Artex Oil Co.'s No. 1 M. V. Smith, 330 ft. S, 330 ft. E, NW cor. SE NW, Sec. 31-15-17 ..... Coring 2,752 ft.
Copenhaven et als' No. 1 Warnick, Sec. 2-15-17 ..... S.D. 2,190 ft.
Kobler & Erickson's No. 1 Rumph & Tyson, 300 ft. N, 300 ft. W, SE cor. Sec. 13-15-15 ..... Set 10-in. at 98 ft.
C. H. McDonald's No. 1 Fogle, Sec. 13-14-16 ..... S.D. 2,201 ft.; W.O.
A. P. Smith et als' No. 1 Reynolds, C SW NW, Sec. 21-14-17 ..... Cmtd. 10 in. 42 ft. S.D. 420 ft.
United Carbon Co's No. 2 Puckett, 660 ft. N, 660 ft. E, SW cor. SW Sec. 15-19-5 ..... Drlg. 680 ft.

PIKE COUNTY

Theo. Davis, trustee's No. 1 Ruth Wilson, 300 ft. S, 200 ft. W, NE cor., Sec. 25-5-26 ..... S.D.; funds; T.D. 718 ft.

POPE COUNTY

Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE Sec. 13-9-9 ..... Fishing for tools 750 ft.
M. W. Greeson's No. 1 C. S. Parke, 330 ft. N, 330 ft. W, SE cor. Sec. 21-8-24 ..... Location.

PRAIRIE COUNTY

Transcontinental Oil Co.'s No. 1 Louis Novak, 330 ft. E, 330 ft. N, SW cor. SW NE, Sec. 36-2n-6 ..... Drlg. 2,430 ft.

SABINE PARISH

Bridges-Clark Oil Co.'s No. 1 J. W. Guy, 300 ft. N, 300 ft. E, SW cor., Sec. 33-10-12 ..... Rigging up.

ST. FRANCIS COUNTY

Brownlee Drlg. Co.'s No. 1 Whitted, 110 ft. N, 110 ft. E, SW cor. SE NW Sec. 28-4-1 ..... S.D.; funds, 300 ft.

UNION COUNTY

Addie & Modisette's No. 1 Union Sawmill, SW cor. SW SE Sec. 25-19-12 ..... Location.
Alcal Oil Corp.'s No. 1 J. A. Haney, 660 ft. W, 300 ft. S, NE cor. SW SE, Sec. 1-17-16 ..... Rig up.
Sam Arrendale's No. 1 Gallagher & Nelson, 200 ft. N and W, SE cor. Lot 5, Sec. 18-18-17 ..... Cored shale; S.D. 2,274 ft.
Bredham and others' No. 1 Craig, SW cor. NW NE Sec. 6-18-15 ..... Cmtd. 6-in. 2,079 ft.
W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17 ... Coring lime 4,090 ft.
S. Y. Dorfman's No. 1 Simmons, 150 ft. N, 150 ft. E, NW SW, Sec. 13-16-15 ..... D.S. test 2,044 and 2,053 ft; dry, coring 2,061 ft.
O. W. Estes' No. 1 Felsenthal, 330 ft. S, 330 ft. W, NE cor. NE NW Sec. 2-18-15 ..... S.D.; W.O. 125 ft. oil and S.W. in hole; T.D. 2,191 ft.
O. W. Estes' No. 1 Telford, 320 ft. S, 320 ft. E, NW cor. SW, Sec. 35-17-14 ..... 800 ft. oil; bailing to test 2,230 ft.
Joe Modisette et als' No. 2 Union Sawmill, 1,620 ft. W, 1,020 ft S, NE cor., Sec. 14-18-14 ..... D.S. test 2,195-2,235 ft; 5 joints mud and oil; cm ng. 6⅝-in 2,193 ft.. Stdg. 1,800 ft. in fluid 10% S.W; bailing; T.D. 2,235 ft.
Oil Well Corp.'s No. 1 Union Sawmill, 150 ft. S, 150 ft. E, NW cor., Sec. 10-19-14 ..... Cmtd. 10-in. 100 ft; drlg. 1,350 ft.
Stark et als' No. 1 Ainsworth, NE cor. NW NE NE, Sec. 8-19-16 ..... S.D; fuel; T.D. 2,066 ft.

VAN BUREN COUNTY

Glenn Cole et als, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept. 1928. S.D. 140 ft.; resumed drlg. Aug. 25; U.R.; T.D. 150 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Drlg. 1,640 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32 ..... S.D. 1,500 ft.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW Sec. 35-9-8 Cmtng. 5 3/16-in. 3,500 ft; S.D.

EAST TEXAS

CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. ..... Tested dry 1,870 ft.; S.D., 1,920 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ..... Drlg. 2,050 ft.
Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. ..... S.D. 1,862 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edward Dean Sur ..... S.D. 2,000 ft.

SHELBY COUNTY

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur ..... S.D. for orders 3,004 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews SE cor. Sec. 14-2s-7e. Jarring out 6-in. to reset at 2,480 ft; T.D. 2,735 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor. Sec. 20-13-3 ..... S.D; quicksand 1,240 ft.

HINDS COUNTY

Harry Gerson's No. 1 Edward House, Blk. 16, West Jackson Subd., City of Jackson, in Twp. 5n, Range 1e ..... Rig up.
Oscar Brown's No. 1 Riverside (formerly Hennessee et als') SE cor. SE SW Sec. 23-16-5 ..... Set 12½-in. 30 ft.; S.D. 1,050 ft.
Love et als' No. 1 Mayes, Sec. 2-5-1e ..... Cmtd. 10-in. 735 ft.
Mrs. Reeder et als' No. 1 State, SE cor. NW NW Sec. 25-6-1e ..... S.D. 2,895 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE Sec. 25-14-4w ..... Set 12½-in. 60 ft.; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE Sec. 2-7-16 ..... Set 8¼-in. at 2,792 ft; T.D. 2,861 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... S.D. 2,696 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 ..... Derrick.

LAFAYETTE COUNTY

Banks-Goode et als' No. 1 May, 113½ rods S, 26 rods E, NW cor. SW Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

La.-Miss Oil Co.'s No. 1 Pat Case, NE NE Sec. 21-8-6 ..... Drlg. 2,060 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... Drlg. sand showing little gas; T. D. 2,858 ft.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Running csg; T.D. 2,260 ft.
Park Bowser et als' No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

Home Oil Prod. Co.'s No. 1 E. P. Rainey, NW NW Sec. 13-5-1e ..... Claim show gas 2,912 ft.; recmtd. 10-in. casing for test.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-5 ..... S.D. 2,395 ft.

YALOBUSHA COUNTY

Phillip Bros.' No. 1 James, Sec. 20-11-5 ..... Coring 3,568 ft.
Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, C Sec. 14-11-4 ..... Drlg. sand and shale 1,750 ft.

YAZOO COUNTY

Amerada Pet. Co.'s No. 1 Doherty, SW SW Sec. 24-12-2 Rigging up.

TENNESSEE
DECATUR COUNTY

Chester County Oil Co.'s No. 1 Montgomery ..... Cmtd. 6-in. 1,040 ft.; drlg. hard gray lime 1,165 ft.

ALABAMA
LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... Cmtd. 4⅞-in. 1,660 ft; drlg. sandy shale 1,720 ft.

MARION COUNTY

Hobson and others' No. 1 John Clark, SE Sec. 29-11-14 Drk. pattern.

SUMTER COUNTY

B. W. Bates' No. 1 fee, Sec. 3-18-1 ..... U.R. surface csg. at 300 ft.; to set 6-in.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D.; S.W. flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Drlg. 760 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 53)

Bayou State Oil Corp.'s No. 18 Levee Board, 450 ft. N, 150 ft. E, SW cor. NW, Sec. 23-22-15 ..... W.O.S.R; T.D. 1,003 ft.

CADDO PARISH—DIXIE

Sam Gold's No. 3 Hunter, 660 ft. N, 660 ft. W, SE cor. SW NE, Sec. 17-19-14 ..... 200 ft. oil and S.W. in hole 2,457 ft; W.O.S.R; topped broken sand 2,415 ft.

The Texas Co's No. 3 Sentell, 866 ft. N, 340 ft. W, SE cor. Sec. 9-19-14 ..... Rigging up.

Gulf Ref. Co.'s No. 6 Oden, 660 ft. S, 660 ft. W, NE cor., Sec. 18-19-14 ..... Cmtd. 6⅝-in. 2,380 ft; drilled to 2,444 ft; plugged back to 2,423 ft.

Lide et als' No. 1 Dickson heirs, 795 ft. N, 200 ft. E, SW cor., Sec. 10-19-14 ..... Coring 2,400 ft.

CADDO PARISH—OIL CITY

Gulf Ref. Co.'s No. 22-A Levee Board, 1,126 ft. S, 1,100 ft. E NW cor. NE, Sec. 34-21-16 ..... Began drlg. Dec. 24; cmtd. 10-in. 204 ft; drlg. 1,575 ft.

H. M. Matson's No. 1 U. S. Gov't (no check) ..... Derrick.

Magnolia Pet. Co.'s No. 19 Doan-Thigpen, 330 ft. N, 990 ft. W, SE cor., Sec. 6-20-15 ..... Set 5 3-16-in. liner; bailing to test 1,660 ft; old T.D. 3,051 ft.

P. T. Mize's No. 1 La. O. R. Corp., 445 ft. N, 100 ft. E, SW cor. SE, Sec. 1-20-16 ..... Began drlg. Dec. 23; cmtd. 10-in. 62 ft; drlg. 915 ft.

The Texas Co.'s No. 72 Levee Board, 725 ft. N, 210 ft. E, SW cor. SE, Sec. 27-21-16 ..... Rigging up.

Thompson & Fitzsimmons' No. 1 Howell, 600 ft. S, 300 ft. W, NE cor. SE, Sec. 13-22-16 ..... Top chalk 1,580 ft; coring 1,900 ft.

CADDO PARISH—VIVIAN DISTRICT

Oilfields Expltn. Co.'s No. 15 Caldwell, 810 ft. S, 810 ft. E, NW cor., Sec. 29-22-15 ..... Derrick.

PINE ISLAND

Double H Oil Co's No. 13 Spell 750 ft. N, 450 ft. W, SE cor. NE Sec. 15-21-15 ..... Cmtd. 6-in. 1,441 ft.

E. W. McGoldrick's No. 1 Dreyfuss-Lane, 515 ft. N, 300 ft. E, SW cor. NE, Sec. 15-21-15 ..... Cmtd. 10-in. 40 ft; 6-in. 1,510 ft. W.O.S.R; 1,700 ft.

Shreveport Oil Corp.'s No. 3 Hicks et al, 420 ft. S, 450 ft. W, NE cor. NW, Sec. 32-21-15 ..... Cmtd. 6-in. 2,11 ft.

CLAIBORNE PARISH—HOMER

Oakes et als' No. 1 Richardson, NE SE, Sec. 19-21-17 .. S.D. 1,700 ft.

LA SALLE PARISH—URANIA

Ark. Fuel Oil Co.'s No. 5 Urania, 200 ft. S, 200 ft. E, NW cor. NE SE, Sec. 24-10-1e ..... Drlg. lime 3,800 ft.

Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,570 ft.

Philp et als' No. 1 Urania, SE cor. NE NE, Sec. 1-10-1e.. Tested 500,000 ft. gas and sanded up; C.O; setting liner to test; T.D. 730 ft.

Randall et als' No. 3 Urania, Sec. 1-10-1e ..... S.D. 675 ft.

Trio Oil Co.'s No. 2 Urania, NE cor. SW SW NW, Sec. 19-10-1e ..... Rigging up.

MOREHOUSE PARISH

Consolidated Carbon Co.'s No. 2 White, Sec. 16-20-4 .... O.W.D.D; cmtd. 8-in. 87[illegible] ft; drlg. 1,620 ft.

J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5 ..... Drlg. 2,043 ft.

Southern Carbon Co.'s No. 14 Tensas, 660 ft. N, 660 ft. E, SW cor. NW Sec. 34-21-4 ..... Began drlg. Dec. 29; cmtd. 12-in. 179 ft.

United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4 ..... Location.

United Carbon Co.'s No. 3 Patton, 660 ft. W, 660 ft. S, NE cor. SE, Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Amalgamated Carbon Co.'s No. 2 Cole, 742 ft. E. 703 ft. S. NW cor., Sec. 42-19-4 ..... Began drlg. Nov. 27; cmtd. 13-in. 185 ft; 8-in. 890 ft; drlg. 2,116 ft.

Chauvin Gas Co.'s No. 3 Slagle Johnson, 2,539 ft. S, 55 ft. E. NW cor., Sec. 47-18-4 ..... Drlg. shale and boulders 1,520 ft.

Chauvin Gas Co.'s No. 4 Slagle Johnson, 4,505 ft. S, 257 ft. E, NW cor., Sec. 47-18-4 ..... Location.

Hope Prod. Co.'s No. 1 Fairbanks, 660 ft. N, 624 ft. E, SW cor. SE, Sec. 25-20-4 ..... Arranging D.S. test 2,198 ft.

Hope Prod. Co.'s No. 2 Fairbanks, 1,876 ft. E, 628 ft. N, SW cor. SE, Sec. 25-20-4 ..... Location.

Hope Prod. Co.'s No. 3 Fairbanks, 1,876 ft. E, 628 ft. S. NW cor. NE, Sec. 36-20-4 ..... Location.

G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-5..... Plugging back to 2,234 ft; T.D. 2,480 ft.

La. Gas & Fuel Co.'s No. 1 Beard, Sec. 46-18-4 ..... Derrick.

Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Derrick.

Magnolia Pet. Co.'s No. 4 U. S., Sec. 20-19-5; reported completed July 31, in error ..... Tested 1,000,000 ft. gas at 515 lbs rock pressure; set liner 2,528 ft; bailed dry; plugged back to 2,200 ft; estimated 500,000 ft. gas W.O; waiting orders 2,528 ft.

Michlouzanna O. & G. Dev. Co.'s No. 1 Osterlind, 6,877 ft. S, 819 ft. W. NW cor. irregular Sec. 42-18-4 .... Tested 500,000 ft. gas 2,253 ft; W.O.

Palmer Corp.'s No. 1 Cagle, 1,964 ft. S, 476 ft. E, NW cor., Sec. 7-18-5 ..... Fishing 4½-in. liner 2,175 ft; T D. 2,462 ft.

Sho-Van Gas Products Co.'s No. 3 W. Va., 1,980 ft. S and W, NE cor., Sec. 8-18-4 ..... Rigging up.

Sho-Van Gas Products Co.'s No. 4 W. Va., 1,078 ft. N, 294 ft. W, NE cor., Sec. 49, in Sec. 7 ..... Location.

Sho-Van Gas Products Co.'s No. 5 W. Va., 2,046 ft. S, 1,790 ft W, NE cor. SE, Sec. 6-18-4 ..... Cmtd. 6-in. 2,154 ft.

Southern Carbon Co.'s No. 14 Fairbanks, Sec. 43-20-4.... Drlg. 1,460 ft.

Southern Carbon Co.'s No. 4 Phillips, 660 ft. S, 660 ft. E, NW cor., Sec. 8-19-4 ..... Arranging D.S. tes. 2,177 ft.

Union Gas Products Co.'s No. 1 Hare, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 22-19-5 ..... Drlg. 1,840 ft.

United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,896 ft. N, 6,022 ft. W, cor. Secs. 49, 26, and 25, Sec. 49-20-5 ..... Derrick.

Palmer Corp's No. 1-A Earle, Sec. 2-16-5 ..... Bailing 6-in. csg.; T.D. 2,283 ft.

United Oil & Nat. Gas Products Co. of La.'s No. 3 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.

United Carbon Co.'s No. 5 Spade, 660 ft. N, 660 ft. W, SE cor. NE, Sec. 35-19-3 ..... Rigging up.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.

RED RIVER PARISH

Root Refineries, Inc.'s No. 1 Home State & Savings Bank, 330 ft. N, 330 ft. W, C, Sec. 8-13-10 ..... Oil show 2,570 ft; drill stem test; S.W; cored sand showing gas 2,598 ft; S.D. 2,667 ft.

Triple Oil Co.'s No. 1 W. M. Pollock, Sec. 33-13-11..... Cmtd. 6⅝-in. 2,456 ft; W.O.S.R.; 2,470 ft.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No. 1 A. E. Purvis, 762 ft. N, 1,180 ft. W, SE cor., Sec. 34-17-6 ..... Cmtd. 10-in. 960 ft; drlg. 1,600 ft.

W. C. Feazell's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig up.

W. C. Feazell's No. 1 E. L. Wilson, 647 ft. N, 241 ft. E, SW cor. NW, Sec. 31-16-6 ..... Drlg. gummy shale 2,270 ft.

Industrial Gas Co.'s No. 1 Boughton, N 85 deg., 10 min. W, 4,458 ft., 865 ft. S, NE cor., Sec. 1-16-6 ..... Blew out; estimated 15,000,000 ft. gas 2,337 ft; drlg. 2,357 ft.

Magnolia Pet. Co.'s No. 4 C. M. Noble, 400 ft. S, 660 ft. W, NE cor. SE NE, Sec. 35-16-5 ..... Location.

M. L. Meredith's No. 1 Holdness, 1,980 ft. S, 990 ft. W, NE cor., Sec. 15-16-6 ..... Shut down 890 ft.

Nat. Gas Products Co.'s No. 1-C Sartor, 536 ft. N, 1,332 ft. E, SW cor. NW, Sec. 21-16-6 ..... Blew out at 251 ft; rigging up on second hole.

Northern La. Nat. Gas Co.'s No. 5 Boykin, 380 ft. N, 157 ft. W, SE cor., Sec. 20-17-6 ..... Drlg. 9-in. plug 920 ft.

Palmer Corp.'s No. 1-A Earle, Sec. 2-16-5..... Cmtd. 6-in. 2,281 ft.

Palmer Corp.'s No. 1 Eubanks, 1,100 ft. N, 350 ft. E, SW cor. SE NW, Sec. 26-17-6 ..... Stuck. D.S. 2,420 ft.; bridged to 2,171 ft; recmtd. back to 2,440 ft; old T.D. 3,118 ft.

Palmer Corp.'s No. 5 Rhymes, 1,386 ft. N, 599 ft. E, SW cor., Sec. 34-17-6 ..... Cmtd. 6 in. 2,300 ft.

Southern Carbon Co.'s No. 1 Hale, 660 ft. N, 760 ft. W, SE cor. Sec. 16-16-6 ..... Began drlg. Dec. 29; drlg. 150 ft.

Southern Carbon Co.'s No. 1 S. R. Humble, 600 ft. N, 600 ft. W, SE cor., Sec. 26-16-6 ..... Drlg. 6-in. plug 2,280 ft.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 3 Horne, 560 ft. N, 195 ft. E, C, Sec. 33-10-12 ..... Drlg. 3,120 ft.

Hatcher et als' No. 1 Moore heirs, 300 ft. N, 300 ft. E, C, Sec. 32-10-12 ..... Derrick.

Magnolia Pet. Co.'s No. 5 E. E. Hall, 350 ft. N, 312 ft. E, SW cor. NW SW, Sec. 33-10-12 ..... Cmtd. 8⅝-in. 3,150 ft; coring lime 3,210 ft.

Reid Clark et als' No. 2 Moore, 1,600 ft. N, 330 ft. W, SE cor., Sec. 32-10-12 ..... W.O.S.R; 3,236 ft.

UNION PARISH

Bahan & Bahan's No. 3 School, 1,120 ft. N, 650 ft. W, SE cor., Sec. 10-20-3 ..... Cmtd. 6-in. 2,090 ft.

Lyons Gas Co.'s No. 1 A. B. Edwards, 722 ft. W, 852 ft. S, NE cor. NW, Sec. 11-20-3 ..... Setting 6-in. 2,116 ft.

United Carbon Co.'s No. 2 Reid, 1,980 ft. E, 720 ft. S, NW cor. SW, Sec. 12-20-3 ..... Drlg. shale and boulders 2,025 ft.

WEBSTER PARISH—COTTON VALLEY

Magnolia Pet. Co.'s No. 1 McCook & Hibbler, C SW SW, Sec. 22-21-10 ..... S.D; W.O. 6,975 ft.

Ohio Oil Co.'s No. 46 Bodcaw, 660 ft. N, 660 ft. E, SW cor. SW NW, Sec. 28-21-10 ..... Cmtd. 8⅝-in. 3,500 ft; drlg. 3,690 ft.

Standard Oil Co.'s No. 1-E Bodcaw, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 28-21-10 ..... Drlg. hard shale 4,285 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Bateman et als' No. 1 J. E. Womble, Sec. 1-22-11 ..... Tested S.W; S.O. 5-ft. sand 2,712 ft; arranging to plug back.

Bateman et als' No. 2 Womble, 2,840 ft. S, 1,120 ft. E, NW cor., Sec. 1-22-11 ..... Location.

Donohoe O. & G. Co.'s No. 1-B W. B. Roseberry, 250 ft. S, 250 f., E, C, Sec. 19-23-9 ..... Began drlg. Nov. 25; S.D. 104 ft.

Pat Hudson's No. 2 S. Gardner, 330 ft. N, 300 ft. E, C, Sec. 1-22-11 ..... Drilling.

Pat Hudson's No. 1 B. L. Slack, 330 ft. W, 330 ft. N, SE cor. SW, Sec. 36-23-11 ..... Rigging up.

F. E. Estes' No. 2 Pardee, 1,270 ft. W, 50 ft. S, NE cor. NW, Sec. 3-22-11 ..... 6-in. parted; set 5 3-16-in. 2,643 ft; 2-ft. sand; T.D. 2,656 ft.

Magnolia Pet. Co.'s No. 1 J. P. Baker, 1,120 ft. S, 225 ft. E, NW cor. SW, Sec. 35-22-11 ..... Coring shale 3,050 ft.

Magnolia Pet. Co.'s No. 1 C. O. Bailey, 100 ft. N, 660 ft. E, SW cor. NW NE, Sec. 29-23-9 ..... Pumping S.W. 2,758 ft.

Magnolia Pet. Co.'s No. 2 Denman, 100 ft. N, 160 ft. W, SE cor. NE NW, Sec. 1-22-11 ..... Location.

Sarepta Oil Co.'s No. 1 L. S. Gardner, 300 ft. S, 300 ft. W, C, Sec. 1-22-11 ..... Tested S.W. and show oil; W.O. 2,719 ft.

ARKANSAS
JOHNSON COUNTY—CLARKSVILLE

Ark.-La. P. L. Co.'s No. 1 Patterson, 1,020 ft. S, 2,570 ft. E, NW cor., Sec. 14-10-24 ..... Drlg. shell 1,030 ft.

NEVADA COUNTY

Roy Davis et als' No. 1 Chas. Henry, 1,120 ft. N, 1,120 ft. W, SE cor., Sec. 10-12-20 ..... Derrick.

C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20..... Shut down.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 1 Arnold & Doyle, SE SE, Sec. 23-15-16 ..... Waiting on power, to pump; T.D. 2,010 ft.

Marine Oil Co.'s No. 7-A Hayes, Sec. 4-16-15 ..... W.O.S.R; 450 ft. oil; 20-ft. sand; T.D. 2,362 ft.

Southern Prod. Co.'s No. 2-A Wat.s, NW cor. SW SE, Sec. 27-15-15 ..... W.O.S.R; 2,085 ft.

Standard Oil Co.'s No. 10 Powell, 200 ft. S, 160 ft. W, NE cor. NW, Sec. 34-15-15 ..... Drlg. 1,348 ft.

J. D. Wingfield's No. 1 Martin, SW cor., Sec. 26-15-15 ..Set 6⅝-in. 2,085 ft; tested little oil and S.W; W.O; T.D. 2,115 ft.

OUACHITA COUNTY—STEPHENS

La. Oil Ref. Corp.'s No. 1 Green, 330 ft. S, 330 ft. E, NW cor., Sec. 22-15-19 ..... Cmtd. back to 2,240 ft; prod. 500 bbls. S.W and some oil; T.D. 2,494 ft.

Magnolia Pet. Co's No. 1 Grayson, center Lot 30, NE SE Sec. 21-15-19..... Location.

UNION COUNTY—CHAMPAGNOLLE

Magnolia Pet. Co.'s No. 1 Schmidt, 300 ft. N, 300 ft. W, SE cor. NW SW, Sec. 5-17-14 ..... Plugged back to 2,713 ft; T.D. 3,226 ft; tested S.W; recmtng. at 2,713 ft; T.D. 3,226 ft.

Marine Oil Co.'s No. 3-A Thompson, Sec. 10-18-13 ..... Coring 3,505 ft.

Ohio Oil Co.'s No. 1 J. M. Gregory, 330 ft. S, 330 ft. W, NE cor. SW SE, Sec. 1-17-14 ..... Began drlg. Dec. 27; cmtd. 10-in. 210 ft.

UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15 ..... Cmtd. 8¼ in. 2,150 ft.; T.D. 2,187 ft.

Rice et als' No. 1 W. Ralty, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.

Weisinger et als' No. 1 Lacy, 181 ft. S, 557 ft. W, NE cor. NW, Sec. 6-18-15 ..... Began drlg. Dec. 30; drlg.

UNION COUNTY—SMACKOVER

Ark. Fuel Co.'s No. 5 Alphin, Sec. 11-16-16 ..... O.W.D.D; perforated csg. 1,960-70 ft; swbd. dry; filled up 40 ft. oil in hour; W.O.

Lion Oil Ref. Co.'s No. 1 James, CWL, Lot 2, NW, Sec. 6-16-15 ..... T.A. 2,018 feet.

Root Refineries, Inc.'s No. 8 Calloway, 510 ft. S, 150 ft. W, NE cor., Sec. 4-16-15 ..... Cmtd. 4½ in. 2,248 ft.; T.D. 2,287 ft.

Skelly Oil Co.'s No. 8-A Alphin, 1,320 ft. S, C, Sec. 24-16-16 ..... W.O.S.R. 2,116 ft.

EAST TEXAS
PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 9 Werner, 1,750 ft. S, 1,052 ft. W, NE cor. E. F. Mitcheson Sur. ..... Began drlg. Dec. 14; cmtd. 10 in. 40 ft.; tested dry 1,020 ft.; argn. to deepen.

Ark.-La. P. L. Co.'s No. 11 Werner, 1,850 ft. S, 1,052 ft. W, NE cor. E. F. Mitcheson Sur. ..... Location.

S. H. Gardner's No. 5 Brumble, 5,966 ft. E, 4,132 ft. S, NW cor. B. C. Jordan Sur. ..... Cmtd. 6 in. 2,225 ft. (C. D.)

S. H. Gardner's No. 4 Rocquemore, 5,176 ft. E, 4,432 ft. S, NW cor. B. C. Jordan Sur. ..... Rigging up.

Magnolia Pet. Co.'s No. 1 D. W. Scott, 640 ft. N, 660 ft. E, SW cor. Scott tract in S. Lawless Sur. ..... Coring lime and shale 3,386 ft.

Magnolia Pet. Co.'s No. 6 G. C. Tiller, 393 ft. S, 1,990 ft. E, NW cor. Jane Thorpe Sur. ..... Began drlg. Dec. 29; drlg. 140 ft.

Nat. Gas Prod. Co.'s No. 8 Roquemore, B. C. Jordan Sur. ..... O.W.D.D; drlg. 2,785 ft.

Nat. Gas Prod. Co.'s No. 10 Roquemore, B. C. Jordan Sur. ..... Began drlg. Oct. 20; cmtd. 10-in. 42 ft; drlg. 1,750 ft.

Nat. Gas Prod. Co.'s No. 11 Roquemore, B. C. Jordan Sur. ..... Running sand tester 2,277 ft.

Nemours Corp.'s No. 4 Brumble, 200 ft. N, 200 ft. W, SE cor. E. F. Mitcheson Survey ..... Began drlg. Dec. 28; drlg. 195 ft.

D. Thompson's No. 4 Tiller, Jas. Story Sur. ..... Began drlg. Dec. 26; 10-in. 100 ft; drlg. 1,800 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 57)

BOLING—FORT BEND AND WHARTON

Houston Gulf Gas Co.'s No. 1 Fields (northwest) ..... Drlg. limestone 4,109 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 5 Austin College ..... Cem. surface casing 1,182 ft.
Humble & Valley's No. 6-A Bracey ..... Derrick.
Humble & Valley's No. 7-A Bracey ..... Location.
Humble & Valley's No. 3 Buchanan ..... Derrick.
Humble Oil & Refg. Co.'s No. 8-B Deutrich ..... Waiting cement to set 1,090 ft.
Humble & Valley's No. 9-A Deutrich ..... Shut down 3,200 ft.
Humble & Valley's No. 11-B Deutrich ..... Derrick
Humble & Valley's No. 12-B Deutrich ..... Derrick.
Humble & Valley's No. 1 Duncan, State land ..... Rig
Humble & Valley's No. 6 Gotosky ..... Drlg. sandy shale 3,166 ft.
Humble & Valley's No. 5-B Grawunder ..... Rig.
Humble & Valley's No. 10-B Grawunder ..... Derrick.
Humble & Valley's No. 3 Helmuth ..... Derrick
Humble & Valley's No. 3 Jackson ..... Drlg. hard shale 1,520 ft.
Humble & Valleys No. 1-B Machamehl ..... Drlg. sandy shale 1,212 ft.
Humble & Valley's No. 2 Mahnke ..... Cem. 10-in. casing 60 ft.; drlg. sandy shale 282 ft.
Humble & Valley's No. 6 Mueller ..... Rigging up to pump 3.270 ft.
Humble & Valley's No. 8 Mueller ..... Drlg. shale and lime 2,810 ft.
Humble & Valley's No. 1-C Mitchell ..... Location.
Humble & Valley's No. 4 Payne ..... Testing oil sand 3,414 ft.
Humble & Valley's No. 5 Payne ..... Drlg. shale and lime 2,585 ft.
Humble & Valley's No. 6 Payne ..... Derrick.
Humble & Valley's No. 7 Payne ..... Location.
Humble & Valley's No. 8 Payne ..... Location.
Humble & Valley's No. 5 Saunders ..... Rig.
Humble & Valley's No. 6 Thompson ..... Derrick.
Humble & Valley's No. 7 Thompson ..... Location.
Humble & Valley's No. 4 Sherrill ..... Derrick.
Humble & Valley's No. 6 Urban ..... Sidetracking 2,133 ft.; total depth 3,086 ft.
Humble & Valley's No. 7 Urban ..... Drlg. shale 1,165 ft.
Humble & Valley's No. 8 Urban ..... Drlg. sandy shale and lime 1,628 ft.
Humble & Valley's No. 7-A Walton ..... Shut down 1,190 ft.
Humble & Valley's No. 8-A Walton ..... Derrick.
Humble & Valley's No. 3-A Washington ..... Rig.
Humble & Valley's No. 4 Woodley ..... Standing 1,212 ft.
Humble & Valley's No. 5 Woodley ..... Drlg. shale and sand 1,091 ft.
Humble & Valley's No. 6 Woodley ..... Derrick

DE WALT—FORT BEND COUNTY

Humble Oil & Refining Co.'s No. 2-C Bankers Mortgage ..... Cem. 6⅝-in. casing 3,390 ft.
Humble Oil & Refining Co.'s No. 2-B Bankers Mortgage ..... Rig.
Humble Oil & Refining Co.'s No. 11 Brazos ..... Drlg. 326 ft.
Humble Oil & Refg. Co.'s No. 9 Hamner fee ..... Location.
Humble Oil & Refg. Co.'s No. 13 Sugarland ..... Rig.
Humble Oil & Refining Co.'s No. 2-B Sugarland ..... Comp. flowing 560 bbls. oil 3,772 ft.
Humble Oil & Refg. Co.'s No. 6 Nelson ..... Cem. surface casing 1,229 ft.

HUMBLE—HARRIS COUNTY

John Deering's No. 5 Bissonet ..... Drlg. 2,412 ft.
Humble Oil & Refg. Co.'s No. 6 Williams ..... Comp. flowing 1,600 bbls. oil 5,048 ft.
Humble Oil & Refg. Co.'s No. 7 Williams (south) ..... Failed to flow; running tubing 5,280 ft.
Humble Oil & Refg. Co.'s No. 8 Williams (south) ..... Rig
Humble Oil & Refg. Co.'s No. 9 Williams, south ..... Comp. flowing 4,000 bbls. oil 4,892 ft.
Humble Oil & Refg. Co.'s No. 10 Williams (south) ..... Drlg. shale 4,885 ft.
Humble Oil & Refining Co.'s No. 2 Trahon (south) ..... Drlg. hard rock 4,059 ft.
South Texas Petroleum Co.'s No. 12 Morris (south) ..... Rigging up to pump 5.367 ft.
South Texas Petroleum Co.'s No. 13 Morris (south) ..... Comp. flowing 500 bbls. oil 5,406 ft.
South Texas Petroleum Co.'s No. 14 Morris, south ..... Rigging up.
South Texas Petroleum Co.'s No. 2 Lee (south) ..... Drlg. shale showing oil 4,649 ft.
South Texas Petroleum Co.'s No. 3 Lee ..... Derrick.
Sun Oil Co.'s No. 3 Bender (northwest) ..... Total depth 3,785 ft.; side tracking 3,683 ft.
The Texas Company's No. 1 Atlantic & Gulf, southeast ..... Rig.
The Texas Company's No. 30 Carroll, northeast ..... Rig.
The Texas Company's No. 36 Kohler, northeast ..... Rig.
The Texas Company's No. 2 Dunman, south side ..... Failed to flow; running tubing 5,061 ft.
The Texas Company's No. 3 Dunman, south side ..... Reaming to set screen 5,161 ft.
The Texas Company's No. 4 Dunman, south side ..... Reaming to set screen 5,144 ft.
West Production Co.'s No. 2 Foster ..... Drlg. gumbo 2,106 ft.

BLUE RIDGE—FORT BEND COUNTY

Cunningham Prod. Co.'s No. 6 Blakely (workover) ..... Shut down 2,873 ft.
Humphreys Corp.'s No. 4 West Schenck (workover) ..... Drlg. 3,643 ft.
E. F. Simms' No. 1 Blakely ..... Rigging.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 6 Whitehead (workover) ..... Drlg. 3,962 ft.
Gulf Production Co.'s No. 31 Taylor ..... Drlg. hard sand 3,992 ft.
Navarro Oil Co. and Texas Exp. Co.'s No. 11 Dooley (workover) ..... Drlg. sandy shale 4,096 ft.
Navarro Oil Co. and Humble Oil & Refg. Co.'s No. 5 Dooley (workover) ..... Standing after testing dry 5,039 ft.
Rio Bravo Oil Co.'s No. 11-B Settegast ..... Drlg. hard sand 1,274 ft.
Rio Bravo Oil Co.'s No. 12-A Settegast (workover) ..... Drlg. gumbo 4,680 ft.
Rio Bravo Oil Co.'s No. 17-A Settegast, west ..... Drlg. hard sand 3,941 ft.
Saxet Gas Co.'s No. 5 Herman (southwest) ..... Washing 4,063 ft.
Saxet Gas Co.'s No. 6 Herman, southwest ..... Bailed dry 4,432 ft.; to deepen.
Saxet Gas Co.'s No. 7 Herman, southwest ..... Derrick.
Superior Oil Co.'s No. 3-A Whitehead (workover) ..... Drlg. rock 1,000 ft.
Superior Oil Corp.'s No. 5-B Whitehead ..... Drlg. 4,017 ft.
Superior Oil Corp.'s No. 3 Calvert ..... Location.
Superior Oil Corp.'s No. 2 Herman, southwest ..... Total depth 4,809 ft.; tested salt water 4,682-4,745 ft.
Smith & Plummer's No. 1 Settegast ..... Abandoned 6,091 ft.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 9 Groggan ..... Testing sandy shale showing oil 3,464 ft.
Empire Gas & Fuel Co.'s No. 10 Groggan ..... Comp. flowing 300 bbls. fluid, 10 per cent oil, 3,591 ft.
Sun Oil Co.'s No. 54 Mitchell ..... Drlg. 536 ft.
The Texas Company's No. 5 Green (workover) ..... Pulling screen to deepen 3,290 ft.

HULL—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 30 Barngrover ..... Comp. flowing 600 bbls. oil 3,917 ft.
W. B. Flynn's No. 8 Harrison (workover) ..... Drlg. 2,816 ft.
Gulf Production Co.'s No. 50 Phoenix (workover) ..... Drlg. 4,967 ft.
Gulf Production Co.'s No. 68 Phoenix (workover) ..... Drlg. 3,099 ft.
Houston Production Co.'s No. 14 Barngrover ..... Drlg. 3,211 ft.
Humble Oil & Refg. Co.'s No. 25 Guedry ..... Drlg. sand and boulders 817 ft.
Ocean Springs Oil Co.'s No. 1-H Palmer ..... Tested salt water 1,438 ft.; to deepen.
Republic Production Co.'s No. 57 Dolbear (workover) ..... Drlg. 1,309 ft.
Republic Production Co.'s No. 122 Dolbear (workover) ..... Comp. pump 300 bbls. fluid, 20 per cent oil.
Republic Production Co.'s No. 63 Dolbear (workover) ..... Rigged up to deepen.
The Texas Company's No. 8 Hannah-Vacuum ..... Drlg. gumbo 2,657 ft.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 1 J. F. Ahlers ..... Derrick.
Benedum & Trees' No. 1 Moore ..... Heaving shale 4,179 ft.; washing.
The Texas Company's No. 4 fee (workover) ..... Shut down waiting drill pipe 3,958.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 4 Mayes ..... Set screen to test 2,830 ft.
Pure Oil Co.'s No. 6-A Mayes ..... Tested salt water showing oil 2,847 ft.; pulling screen.
Pure Oil Co.'s No. 8 Mayes ..... Temporarily abandoned 3,086 ft.
Pure Oil Co.'s No. 9 Mayes ..... Rig.
Pure Oil Co.'s No. 4 Lost Lake ..... Derrick.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Total depth 5,734 ft.; drlg. plug 5,572 ft.

BATSON—HARDIN COUNTY

Ada Belle Oil Co.'s No. 130 Carlton ..... Comp. pumping 3 bbls. 1,284 ft.
Ada Belle Oil Co.'s No. 131 Hooks & Choate ..... Drlg. 671 ft.

SOUR LAKE—HARDIN COUNTY

Austin et al's No. 1 Watson ..... Shut down 966 ft.
Lake View Oil Co.'s No. 8 Minor ..... Drlg. 2,053 ft.
Gilbert Oil Co.'s No. 107 Gilbert ..... Derrick.
M. E. Peveto's No. 1 Merchant ..... Rig.
E. M. Terry's No. 1 Wirt Davis ..... Drlg. 892 ft.
The Texas Company's No. 287 fee ..... Drlg. shale 2,602 ft.
The Texas Company's No. 305 fee ..... Derrick.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 86 Cotton ..... To pump 1,118 ft.
Rio Bravo Oil Co.'s No. 86-A Cotton ..... Comp. flowing 50 bbls. oil 558 ft.
Rio Bravo Oil Co.'s No. 86-B Cotton ..... Drlg. shale and hard sand 353 ft.

ORANGE—ORANGE COUNTY

Supreme Oil Co.'s No. 3 Jackson (workover) ..... Drlg. 3,306 ft.
Sinclair Oil & Gas Co.'s No. 2 Leon (workover) ..... Rig up to deepen.

GOOSE CREEK—HARRIS COUNTY

R. J. Bradbury's No. 5 Gillette ..... Shut down 911 ft.
Cedar Bayou Oil Co.'s No. 11 Busch ..... Bailed dry 2,611 ft.; standing.
Russell Ferrell's No. 4 Gillette (workover) ..... Pulling screen to deepen.
Humble Oil & Refg. Co.'s No. 77 Simms-Smith ..... Rig.
Lake Shore Oil Co.'s No. 4 Duke ..... Shut down 2,594 ft.
J. M. West, trustee, No. 3 Scorrega ..... Tested salt water 5,081 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 55 McFaddin (workover) ..... Drlg. sand and shale 5,662 ft.
Yount Lee Oil Co.'s No. 71 McFaddin (workover) ..... Running tubing 3,806 ft.
Yount Lee Oil Co.'s No. 120 McFaddin ..... Drlg. shale and sand 5,865 ft.
Yount Lee Oil Co.'s No. 108 McFaddin (workover) ..... Comp. flowing 1,325 bbls. 4,110 ft.
Yount Lee Oil Co.'s No. 121 McFaddin ..... Drlg. sand 4,434 ft.; showing oil.
Yount Lee Oil Co.'s No. 122 McFaddin ..... Drlg. shale and lime 4,196 ft.
Yount Lee Oil Co.'s No. 99 Gladys City ..... Derrick.
Yount Lee Oil Co.'s No. 13 Gladys City (workover) ..... Drlg. sand and lime 4,317 ft.
Yount Lee Oil Co.'s No. 45 Gladys City (workover) ..... Swabbing 4,231 ft.
Yount Lee Oil Co.'s No. 61 Gladys City ..... Drlg. 3,929 ft.
Yount Lee Oil Co.'s No. 11 Fee (workover) ..... Swabbing 3,825 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Continental Oil Co.'s No. 1 Hogg ..... Abandoned 6,218 ft.
Saxet Oil Co.'s No. 2 Hogg ..... Drlg. broken sandy shale 4,221 ft.

NORTH DAYTON—LIBERTY COUNTY

Humble Oil & Refining Co.'s No. 1 Jamison, south ..... Derrick.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 5-A Smith ..... Fishing 4,492 ft.
Marrs McLean's No. 6 Cade (old well) ..... Drlg. 4,146 ft.
Marrs McLean's No. 12 Cade (workover) ..... Sidetracking
Marrs McLean's No. 17 Cade ..... Drlg. 1,942 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 20 Moore ..... Total depth 928 ft.; sidetracking at 481 ft.

DAMON MOUND—BRAZORIA COUNTY

H. R. Cullen's No. 2 Smith ..... Set 9⅝-in. casing; total depth 3,418 ft.; heaving shale.
L. & M. Oil Co.'s No. 5 Wisdom ..... Rig.

REFUGIO—REFUGIO COUNTY

Benedum & Trees' No. 3 Rooke ..... Cored sand 5,614 ft.
Morgan Oil Corp.'s No. 1 Fox, Block 72 ..... Drlg. shale 2,240 ft.
Herman F. Heep's No. 1 Rutherford ..... Shut down for repairs 2,010 ft.
Houston Gulf Gas Co.'s No. 1 Lambert ..... Drlg. sticky shale 4,329 ft.
Houston Gulf Gas Co.'s No. 2 Morgan-Vance ..... Drlg. sticky shale 1,620 ft.
Houston Gulf Gas Co.'s No. 3 Cummings ..... Rig.
Houston Gulf Gas Co.'s No. 6 O'Brien ..... Drlg. gumbo 1,118 ft.
Houston Gulf Gas Co.'s No. 9 T. P. Shelly ..... Rig.
Houston Oil Co.'s No. 9 Pratt-Hewitt-Rooke ..... Drlg. gumbo and lime 3,189 ft.
Houston Oil Co.'s No. 12 Pratt-Hewitt-Rooke ..... Shut down for repairs 3,510 ft.
Houston Oil Co.'s No. 1 Rooke Hotel ..... Derrick.
Houston Oil Co.'s No. 2 Rooke Hotel ..... Derrick.
Independent Oil & Gas Co.'s No. 1 O'Brien ..... Sand showing oil and gas 6,484-6,500 ft.; cem. 6⅝-in. casing 6,471 ft.
Independent Oil & Gas Co.'s No. 2 Claude Heard ..... Drlg. lime rock 1,092 ft.
Independent Oil & Gas Co.'s No. 1-A J. F. B. Heard ..... Comp. dry gas well 3,680 ft.
Independent Oil & Gas Co.'s No. 1-B J. F. B. Heard ..... Cem. 9⅝-in. casing 3,652 ft.; total depth 3,666 ft.
Independent Oil & Gas Co.'s No. 2-B J. F. B. Heard ..... Drlg. sandy shale 2,733 ft.
Independent Oil & Gas Co.'s No. 1 T. P. Shelley ..... Drlg. shale 2,950 ft.
Independent Oil & Gas Co.'s No. 1 Huddleston ..... Location.
Independent Oil & Gas Co.'s No. 4 Reilly ..... Comp. flowing 150 bbls. pipe line oil 3,694 ft.
Independent Oil & Gas Co.'s No. 6 Reilly ..... Rig.
Independent Oil & Gas Co.'s No. 2 West ..... Drlg. gumbo 1,840 ft.
Larco Co.'s No. 1 Strauch ..... Swabbing 3,673 ft.
Morgan & Morgan's No. 1 Rooke ..... Derrick.
Morgan Oil Corp.'s No. 1 Swift ..... Set 10-in. casing 491 ft.
Morgan Oil Corp.'s No. 4 City ..... Drlg. rock 590 ft.
Morgan Oil Corp.'s No. 1 Fox, Block 71 ..... Set 12½-in. casing 527 ft.
Oigufer Oil Co.'s No. 3 Ryalls ..... Rig.
Saxet Oil Co.'s No. 1 Ryals ..... Drlg. shale 3,958 ft.
Saxet Oil Co.'s No. 1 Cable ..... Derrick.
Saxet Oil Co.'s No. 3 Holmes Heard ..... Pulling liner to deepen 3,714 ft.
Pearson Properties' No. 3 Fox ..... Cored salt water sand 4,794-3,80[illegible] ft.
Ed Price et al's No. 1 Mission River ..... Spudded.
Pearson Properties' No. 1 C. Heard ..... Drlg. shale 887 ft.
Rutherford Traylor Oil Co.'s No. 1, Block 92 ..... Cem. surface casing 492 ft.
Rutherford Traylor Oil Co.'s No. 1, Block 77 ..... Rig.
The Texas Company's No. 1 Shelton ..... Derrick.
Union Prod. Co.'s No. 2 O'Brien ..... Coring 5,416 ft.

Baker Standard Core Barrel with Core Barrel extended partly to show construction.

"We regard the Performance of this Core Barrel as Quite Remarkable—especially considering Hardness of Formation being cored"

This, the comment of one of the enthusiastic users of the Baker Standard Core Barrel, is only one of many hundreds of similar expressions we have received after it had been submitted to the most difficult tests and had made good. The Baker Core Barrel eliminates all guessing about the formations being drilled —it brings the facts to the surface.

¶ THE CORE BARREL—

The Baker Standard Core Barrel consists of two main parts—an outer drilling barrel and an inner core-retaining tube, as shown in the illustration at the left. The superior performance of this Core Barrel is due to the valve shown in the head of the Drill Barrel. The Core Barrel is placed in the string in the same position as the bit, and is operated with a somewhat slower motion and shorter stroke than the drilling bit. It will withstand the most severe usage that can be given with this shorter stroke and slow motion. It will take uncontaminated cores in all formations, whether hard or soft.

¶ THE CORE EXTRACTOR—

The Baker Two-Stage Hydraulic Core Extractor is illustrated below, with the piston shown in the low pressure position. The simple half-turn throw of the catch engages the high pressure piston. The Sub is made with both male and female threads, for extraction of core from either end of Core Retaining Tube. The Core Pusher Plunger fits snugly in Core Retaining Tube. Tongs are also shown.

¶ THE CORE—

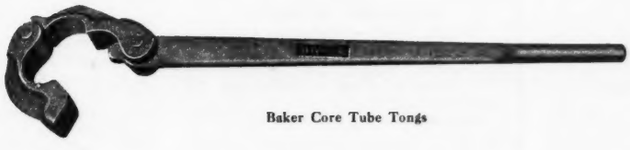
The illustration at the right, which is taken from the photograph of an actual core taken with the Baker Standard Core Barrel, shows the clean-cut, uncontaminated form in which the core is brought to the surface. The form in which the core is recovered depends, of course, on the character of the formation being drilled but, working under either easy or very difficult conditions, the Baker Standard Core Barrel will bring to the surface an accurate and dependable cross section of the formation.

Sample of cores taken with Baker Cable Tool Core Barrel in medium to fairly hard formations.

¶ ACCESSORIES—

For the proper and most efficient use of the Baker Standard Core Barrel we have designed certain necessary accessories, here illustrated. They promote the efficient use of the Barrel and the extraction of the core. For complete information regarding the ordering and use of this Core Barrel equipment request the detailed catalog section.

New style Sub, with both male and female threads and inner threads to connect with Hydraulic Extractor.



Baker Core Tube Tongs

Core Pusher Plunger — for extracting the core from the Core Barrel in good condition.

Baker Drill Barrel Tongs

Baker Two-Stage Hydraulic Core Extractor. Piston is shown in low pressure position. Throwing catch to left and engaging pin on body releases the High Pressure Piston.

Your Guess May Be Good—But Coring Means Positive Knowledge of Formations

Mid-Continent Branches
Tulsa, Oklahoma Houston, Texas
Export Sales Office
25 Broadway, New York City

BAKER OIL TOOLS, INC.
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California Branches
Coalinga, Ventura, Taft, Bakersfield

Mid-Continent Distributors
B. & A. SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Tex.

Baker Standard Core Barrel is Universally Accepted as the Standard of Coring Performance

Stocks carried by Dealers in all active Mid-Continent fields.

Union Prod. Co.'s No. 2 Mitchell ..... Running tubing 5,461 ft.
Union Prod. Co.'s No. 2 Powers (workover) ..... Cem. 5 3/16-in. casing 5,483 ft.; total depth 5,491 ft.
Union Prod. Co.'s No. 1 Ben Shelton ..... Drlg. lime rock 4,193 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co. & Gulf Refining Co.'s No. 25 Miller ..... Set 8-in. casing 91 ft.
Vacuum Oil Co. & Gulf Refining Co.'s No. 8 Bordages ... Coring sand 3,056 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 6 Lempke ..... Drlg. 1,802 ft.
Calcasieu Oil Co.'s No. 16 Watkins ..... Rig.
Rycade Oil Corp.-Humble Oil & Refg. Co.'s No. 4 Gulf Land ..... Drlg. sand 4,595 ft.
Sunshine Oil Co.'s No. 6 Ellender ..... Derrick.
Rex Petroleum Corp.'s No. 1 Duhon ..... Drlg. 2,375 ft.
Star Petroleum Co.'s No. 1 Lacey ..... Drlg. 1,210 ft.
The Texas Company's No. 6 State, Calcasieu Lake ..... Building derrick.

JENNINGS—ACADIA PARISH

The Texas Company's No. 5 Rayne heirs (King tract) .... Drlg. 5,997 ft.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-3w ..... Drlg. sandy lime 2,937 ft.
Yount Lee Oil Co.'s No. 1 E. F. Simms (northwest side) .. Drlg. sand and lime 6,648 ft.
Yount Lee Oil Co.'s No. 8 Houssiere-Latrielle, Section 47-9s-2w ..... Location.

EDGERLY—CALCASIEU PARISH

Drysdale-Savoy Oil Co.'s No. 2 Hill (workover) ..... Rig up to deepen.
Strange Oil Co.'s No. 1 Reed ..... Drlg. 201 ft.
Strange Oil Co.'s No. 1 Koonce ..... Drlg. 623 ft.
Rex Petroleum Co.'s No. 10 Hunter (workover) ..... Fishing drill pipe; total depth 4,- ..

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 49 Star-Vincent ..... Drlg. 2,130 ft.
Garrs McLean's No. 4 Gray (workover) ..... Shut down 1,806 ft.
Vinton Petroleum Co.'s No. 5 Matilda Gray ..... Drlg. 1,911 ft.
Vinton Petroleum Co.'s No. 7 Gray (workover) ..... Comp. pumping 20 bbls. oil 2,811 ..
Wilson Broach's No. 1 Vinton ..... Drlg. 2,192 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 9 Bouilion fee ..... Rigging up.
Rycade Oil Corp.'s No. 2 Atchafalaya fee (oil well) .... Drlg. hard, sandy shale and lime 3,396 ft.
Rycade Oil Corp.'s No. 5 Atchafalaya fee ..... Spudded.

STARKS—CALCASIEU PARISH

J. O. Davis' No. 1 Industrial ..... Drlg. 3,400 ft.
Gulf Refining Co.'s No. 18 Lutcher-Moore ..... Tested salt water 797 ft.; to deepen.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 9 Yount Lee ..... Drlg. gumbo 1,466 ft.

ANSE LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 1 Hebert ..... Derrick.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 17 United Land Co. ..... Rig.

MISCELLANEOUS WILDCATS

TEXAS

BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen, Allen Dome .. Total depth 4,787 ft.; cem. 9⅝-in. casing 4,344 ft.
Faust et al's No. 5 Faust ..... Shut down 3,248 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Drlg. gummy shale 3,220 ft.
Steel & Strickland's No. 1 Lockridge ..... Rig.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... No report.

FORT BEND COUNTY

Gulf Production Co.'s No. 1 Brazos Valley, Clodine ..... Drlg. sand and gravel 205 ft.
Pure Oil Co.'s No. 1 Farris, Roberts Sur. ..... Location.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Shut down 4,055 ft.
R. E. Brooks' No. 1 Beall, Eureka ..... Drlg. gumbo 1,668 ft.
A. F. Belunek's No. 1 Thompson ..... Rig.
Cranfill & Reynolds' No. 1 Brown ..... Drlg. water sand showing some oil 4,520 ft.
Hammond et al's No. 1 Brodt ..... Gumbo 1,190 ft.; shut down after fire.
Higgins Oil & Fuel Co.'s No. 1 Siadous, Mykawa ..... Tested salt water in sand 4,131-47 ft.
Humble Oil & Refg. Co.'s No. 7 Warren, Hockley ..... Spudded.
Humble Oil & Refg. Co.'s No. 2 Minnetex ..... Standing with casing cem. 1,177 ft.
Humble Oil & Refg. Co.'s No. 1 Siadous (workover) .... Drlg. shale 3,948 ft.
Humble Oil & Refg. Co.'s No. 2 Woodburn ..... Trying to make drill stem test 3,864 ft.
Rich et al's No. 1 Highlands ..... Derrick.
Watts Brothers' No. 1 Hubert, Mykawa ..... Drlg. shale 4,366 ft.

JEFFERSON COUNTY

Gulf Production Co.'s No. 8 Bordages ..... Drlg. 5,598 ft.
Gulf Production Co.'s No. 2 Guy Junker, Fannette ..... Drlg. 4,279 ft.
River Oil Corp.'s No. 1 Ship Channel, Brown Survey .... No report.
Rosedale Oil Co.'s No. 1 Walker ..... Standing after testing salt water 1,649 ft.
Stilwell Oil Co.'s No. 1 Brinkman ..... No report.
The Texas Company's No. 2 Pipkin, Big Hill ..... Drlg. sticky shale 6,000 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Drlg. shale 5,868 ft.
Westbury Oil Co.'s No. 1 West, Choate Survey ..... Drlg. 691 ft.

LIBERTY COUNTY

Campbell et al's No. 1 fee ..... Rig.
Gulf Production Co.'s No. 1 Weiser ..... Drlg. 5,578 ft.
Gulf Production Co.'s No. 3 Boyt, Hankamer ..... Tested salt water 3,698 ft.; drlg. 3,966 ft.
Humble Oil & Refg. Co.'s No. 6 Sterling, Moss Bluff .... Pulling tubing 5,661 ft.
Cranfill & Reynolds Co.'s No. 4-A Esperson, Sheeks ..... Drlg. gumbo 1,909 ft.
Cranfill & Reynolds Co.'s No. 5-A Esperson, Sheeks ..... Drlg. sandy shale 1,661 ft.
Cranfill & Reynolds Co.'s No. 6-A Esperson, Sheeks ..... Rig.
Yount Lee Oil Co.'s No. 2 Moores Bluff, Sheeks ..... Drlg. shale 4,547 ft.

MATAGORDA COUNTY

Cockburn et al's No. 1 Hawkins, Shepherds, Mott ..... Location.

MONTGOMERY COUNTY

Kelley-Baker et al's No. 1 Juerges ..... No report.

ORANGE COUNTY

Gulf Production Co.'s No. 1 J. E. Starks, Port Neches ... Fishing 5,778 ft.
Gulf Production Co.'s No. 1 M. H. Starks, Port Neches ... Location.
The Texas Company's No. 2 Polk, Port Neches ..... Started drilling.

SOUTH LOUISIANA

ASCENSION PARISH

Triumph Oil Corp.'s No. 2 Lacey, Sec. 20-10s-4e ..... No report.

ASSUMPTION PARISH

Gulf Refining Co.'s No. 1 Armitese, Napoleonville ..... Rig.
Poor Boys Drilling Co.'s No. 1 LeBarre, Sec. 47-12s-12e .. Rigging up.

CALCASIEU PARISH

Wilfred Lahay's No. 2 James ..... No report.

CAMERON PARISH

Shell Pet. Corp.'s No. 12 Watkins (workover) ..... Pulling screen to deepen 5,221 ft.
Shell Pet. Corp.'s No. 1 Marceaux, Mallard Bay, Sec. 32-12s-2w ..... Waiting cement to set 5,995 ft.
The Texas Company's No. 5 Calcasieu Lake, Calcasieu Lake Dome ..... Location.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Location.
Yount Lee Oil Co.'s No. 1 Starks, Sec. 1-15s-15w ..... Drlg. 7,220 ft.

IBERIA PARISH

The Texas Company's No. 4 Vermillion Bay ..... No report.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 4 Wilbert, White Castle .... Moving in materials.
Standard Oil Co.'s No. 4 Wilbert, Bayou Blue ..... Failed to flow 2,114 ft.; drilling deeper.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue ..... Location.
Standard Oil Co.'s No. 3 Schwing, Bayou Blue ..... Drilling.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue ..... Building derrick.
Standard Oil Co.'s No. 1 Cuse, Bayou Des Glaise ..... Location.

JEFFERSON DAVIS PARISH

Pure Oil Co.'s No. 1 May, Sec. 1-10s-5w ..... Rig.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh ..... Rig.

LA FOURCHE PARISH

Gulf Refining Co.'s No. 25 Stark, Thibodaux ..... Drlg. 3,129 ft.
Gulf Refg. Co.'s No. 1 City of New Orleans, Bay Cham- Drlg. 2,212 ft.

PLAQUEMINE PARISH

Humble Oil & Refg. Co.'s No. 1 Cockrell-Moran, Lake Grand Ecaille ..... Drlg. 966 ft.
Humble Oil & Refining Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Total depth 4,260 ft.; reamed to 3,060 ft.; shut down for repairs.
The Texas Company's No. 3 Garden Island Bay ..... Waiting cem. to set 1,766 ft.

ST. LANDRY PARISH

Elbof Exploration Co.'s No. 1 Ledoux, Eunice ..... No report.
Herbert-Baker Oil Co.'s No. 1 Fisher, Section 10-3S-4e ... No report.
Gulf Refining Co.'s No. 1 Hoskins, Port Barre ..... Comp. flowing 100 bbls. oil 3,476 ft.
Gulf Refining Co.'s No. 1 Ovide Lahaye, Port Barre ..... Rigging.
The Texas Company's No. 3 Botney Bay, Port Barre .... Drlg. 1,401 ft.

ST. MARTIN PARISH

The Texas Company's No. 1 fee, Hager Dome ..... Drlg. 5,658 ft.
The Texas Company's No. 3 fee, Hager ..... Location.
The Texas Company's No. 2 St. Martin, Hager ..... Drlg. 4,452 ft.
The Texas Company's No. 4 fee, Hager ..... Location.
The Texas Company's No. 1 Iberville, Hager ..... No report.
The Texas Company's No. 2 Iberville, Hager ..... Location.
The Texas Company's No. 3 Iberville, Hager ..... Location.

ST. MARY PARISH

Louisiana Land & Exloration Co.'s No. 2 Clark, Berwick .. Derrick.
Vacuum Oil Co.'s No. 1 Zenor, Patterson ..... Rig.

TERREBONNE PARISH

Charles Paggi's No. 2 Evergreen, Sec. 145-15s-16e ..... Location.
The Texas Company's No. 4 State-Bay St. Elaine ..... Derrick.
The Texas Company's No. 2 La. L. & E. Co., Dog Lake .. Drlg. rock 3,869 ft.
The Texas Company's No. 1 State—Bay Junop ..... Cored sand showing oil topped at 4,778 ft.; fishing.
The Texas Company's No. 3 State—Lake Pelto ..... Surface casing set in gumbo 1,158 ft.
The Texas Company's No. 2 State—Caillou Island ..... Drlg. gumbo 2,220 ft.
The Texas Company's No. 3 State—Lake Barre ..... Rig.
The Texas Company's No. 4 State, Lake Barre ..... Location.
The Texas Company's No. 3 L. L. & E. Co., Four Isle ... Location.

SOUTHWEST TEXAS

(Continued from Page 54)

Martinez Survey, 4,660 feet S line, 660 feet E line of W half of survey, total depth 1,887 feet, sand at 1,884-87 feet, 25,000,000 feet of gas.

ABANDONED TESTS

Darst Creek—Guadalupe County

Magnolia Petroleum Co.'s No. 1 A. M. Baker in the James Hodges Survey, 2,875 varas from SW line, 810 varas from NW line of survey, total depth 3,052 feet, in Edwards lime, sulphur water flow, abandoned. Same company's No. 1 C. Zedler in the J. Hodges Survey, 150 feet to NW line and NE line of 100-acre tract, one-half mile S from Magnolia's No. 1 Appling, abandoned.

Aviator Pool—Webb County

C. E. Mayberry's No. 9 Puig, Block 1, Edgingston Subdivision, Puig ranch, Albercas grant, 729 feet W line, 1,100 feet N line, total depth 1,596 feet, abandoned.

Jennings Pool—Zapata County

South Texas Production Co.'s No. 8 Joe Jennings in the Cerrito Blanco grant, 2,640 feet SE line, 2,660 feet NE line, total depth 1,873 feet, abandoned.

NEW LOCATIONS

Darst Creek—Guadalupe County

Magnolia Petroleum Co.'s No. 3 Dix in the J. R. Robinson Survey, 300 feet SW of No. 2, spudded in. Same company's No. 4 Dix, location. Same company's No. 5 Dix, skidding derrick.

DRILLING ACTIVITY

Darst Creek—Guadalupe County

Magnolia Petroleum Co.'s No. 1 W. P. Walker, Survey, 150 feet NW and SW corner of farm or 3,650 feet SW, 3,220 feet NW line of survey, rigging up.

Abercrombie and others' No. 1 Dix, location.

Cranfill & Reynolds' No. 1 Appling in the J. Hodges Survey, 150 feet E, 150 feet most eastern SE of W line of 117-acre farm, 2,300 feet NW, 3,650 feet SW of survey, Block 66, rigging up.

Gulf Production Co.'s No. 1 C. Anderson in the J. C. Darst Survey, 450 feet from S line, 150 feet from E line of farm in Darst Survey, total depth 2,030 feet, drilling in shale. Same company's No. 1 Thomas Dix in the Joel R. Robinson Survey, 150 feet to NE and SE lines of lease, 300 feet SW of United North & South Development Co.'s No. 1 Dix, total depth 2,409 feet, drilling in Del Rio. Same company's No. 1 Tadlock in the Jacob C. Darst Survey, 150 feet NW corner, drilling in shale at 2,105 feet.

Humble Oil & Refining Co.'s No. 2 Baker in the J. C. Darst Survey, 472 feet N line, 183 feet E line of tract, location. Same company's No. 1 Baker in the J. C. Darst Survey, 150 feet N line, 183 feet W line of tract, location. Same company's No. 1 Sally Wilson in the J. C. Darst Survey, 150 feet from N line, 183 feet from W line, drilling in basal Taylor at 2,250 feet. Same company's No. 3 Sally Wilson in the Jacob Darst Survey, 450 feet N line, 300 feet E line, drilling in chalk at 2,300 feet. Same company's No. 1 Yates Wilson in the J. C. Darst Survey, 150 feet N line, 183 feet W line, total depth 2,250 feet, drilling in chalk. Same company's No. 2 Yates Wilson in the J. C. Darst Survey, 150 feet W line, 1,050 feet N line, spudded in.

Magnolia Petroleum Co.'s No. 3 Dix in the J. R. Robinson Survey, 300 feet SW of No. 2 Dix, drilling in shale at 1,630 feet. Same company's No. 1 L. V. Echols in the James Hodges Survey, 150 feet to NW and SW lines of farm, 3,650 feet to SW line, 3,220 feet to NW line of survey, location. Same company's No. 2 L. V. Echols in the James Hodges Survey, 150 feet to SW and SE lines of lease, derrick up. Same company's No. 1 I. M. Richburg in the J. R. Robinson Survey, 150 feet from S and E lines, rigging up. Same company's No. 2 C. Zedler in the J. Hodges Survey, 150 feet from S and W lines, drilling in sandy shale at 400 feet.

Penn Oil Co.'s No. 1 Rand Miller in the Jerome B. Alexander Survey, drilling in Taylor marl at 2,165 feet.

Sun Oil Co.'s No. 1 Knoblock in the Joel R. Robinson Survey, 150 feet each way out of the S corner of Chris Knoblock 150-acre tract in SW part of survey, drilling in chalk at 2,250 feet.

The Texas Company's No. 2 Dallas Wilson in the J. C. Darst Survey, 150 feet to S and W lines, spudded in. Same company's No. 3 Dallas Wilson in the J. C. Darst Survey, 150 feet N of center of S line, location. Same company's No. 2 L. Anderson in the Jacob Darst Survey, 150 feet to N and E lines, total depth 685 feet, shut down. Same company's No. 3 L. Anderson in the Jacob Darst Survey, 150 feet to S and E lines, derrick. Same company's No. 4 Lemmie Anderson in the J. C. Darst Survey, 150 feet to N and W lines of farm, rigging up. Same company's No. 1 Posey, offsetting Sun Co.'s No. 1 Knoblock, 300 feet to the SE, drilling in Georgetown lime at 2,560 feet.

Turman Oil Co.'s No. 2 Rand Miller in the Jerome B. Alexander Survey, center of lease, drilling in shale at 900 feet.

United North & South Development Co.'s No. 2 Thomas Dix in the Joel R. Robinson Survey, 150 feet to SE line of lease, 450 feet to SW line of lease, 300 feet NE of No. 1 Dix, ready to spud.

Pettus Field—Bee County

Mission Drilling Co.'s No. 6 Ray, 1,200 feet E of No. 2, drilling in shale and lime at 2,880 feet.

Lasater Pool—Brooks County

Houston Oil Co. of Texas' No. 1 Holbein-Wormser in the Palo Blanco de Maguellas Survey, 330 feet N line, 6,540 feet E line, direct offset 660 feet S

of No. 1 Lasater, drilling in limy gumbo at 4,040 feet.

Kingsville Pool—Kleberg County

Humble Oil & Refining Co.'s No. 8 R. J. Kleberg, Lot 7, Section 40, K.T.&I. Survey, 150 feet S and E lines of lot, trying to complete for a dry gas well in a sand at approximately 2,400 feet.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 2 J. B. Dunning in the M. B. Kilvin Survey, 1,440 feet N of No. 1, total depth 4,058 feet, shale, shut down.

Nursery Field—Victoria County

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder in the D.L.&C. Survey, 1,634 feet SE lines, 736 feet SW lines, drilling in shale at 5,415 feet.

Cole Pool—Duval County

Magnolia Petroleum Co.'s No. 2 King-Benavides, Block 12, Survey 694, 450 feet N line, 150 feet W line, derrick.

J. G. Mackay's No. 3 Dinn, Survey 454, 660 feet W line, 660 feet N line of NW of SW, rigging up.

Kohler Pool—Duval County

Humble Oil & Refining Co.'s No. 38 Kohler, Survey 144, 990 feet N line, 495 feet E line, drilling at 1,600 feet. Same company's No. 39 Kohler in Survey 165, 1,650 feet S line, 330 feet E line, drilling at 500 feet.

Schoolfield-O'Byrne—Duval County

C. E. Long's (Shell) No. 4 Hahl, Block 26, Survey 250, 330 feet E line, 150 feet N line, drilling at 2,100 feet.

Randado Pool—Jim Hogg County

Randado Oil Corp.'s No. 35 Palacious, Block 2, Survey 291, 150 feet S line, 450 feet E line, standing at 100 feet.

Magnolia Petroleum Co.'s No. 1 Weil, Block 2, Survey 5, 660 feet N line, 349 feet E line, drilling at 1,300 feet.

Henne-Winch-Fariss—Jim Hogg County

George S. Marshall's No. 4 Holbien, Share 3, Block 10, Survey 11, 150 feet S and W lines, derrick up; No. 5 Holbien, Share 3, Block 10, Survey 15, 150 feet N and W lines, rigging up.

Alworth Pool—Jim Hogg County

Charles B. Stevens' No. 2 M. Garza, Block 12, Survey 40, 850 feet NW line, 150 feet NE line, spudded in.

Carolina-Texas Pool—Webb County

Foster Barnsley's No. 7 Webster, Survey 684, 750 feet E line, 510 feet S line of NE of SW of survey, drilling at 2,010 feet.

W. R. Shankle's No. 2 Webster, Survey 684, 1,170 feet W line, 150 feet S line, rigging up.

Magnolia-Cole Pool—Webb County

Magnolia Petroleum Co.'s No. 3 C. Benavides, Survey 662, 1,980 feet W line, 1,980 feet S line, total depth 2,327 feet, sand at 2,320-27 feet, set 8⅛-inch casing at 2,320 feet. Same company's No. 4 Brennan-Benavides in the Mariano Arispe grant, corner Blocks 16, 17, 52, 53. Myrtle E. Hale Subdivision, total depth 2,390 feet, coring. Same company's No. 1 D. Benavides, Block 14, Survey 694, 600 feet to E and S lines, drilling at 20 feet.

O. W. Killam's No. 16 Bruni, Block 45, Survey 8, Mariano Arispe grant, 328 feet NE line, 300 feet N line of Survey 8, Adams (Foltz) Subdivision of Bruni lands, drilling at 158 feet.

Cole Pool—Webb County

E. H. Buckner's No. 1 Bruni, Survey 5, Adams Subdivision, corner Blocks 4, 5, 9, 10, Adams (Foltz) Subdivision, Mariano Arispe grant, drilling at 2,000 feet.

Magnolia Petroleum Co.'s No. 1 S. Perez, Survey 460, J. Poitevent, 1,980 feet N line, 660 feet W line, drilling at 3,720 feet. Same company's No. 2 King-Harper, Block 2, Survey 323, 660 feet N and E lines, location.

Charco Redondo—Zapata County

W. R. Duke's (Duke & Evangeline) No. 2 "B" Martinez, Block 17, W. R. Duke Subdivision, Charco Redondo grant, drilling at 950 feet.

Jennings Pool—Zapata County

Allied Gas Co.'s (Humble) No. 4 F. G. Martinez, Survey 6, 500 feet SW line, 500 feet N line of SW of survey, derrick.

O. W. Killam's No. 17 Cuellar, 600 feet N line, 940 feet E line, 160-acre Cuellar tract out of 1,772-acre Cerrito Blanco grant, derrick; No. 18 Cuellar, Cerrito Blanco grant, 3,567 feet NW line, 2,734 feet NE line of 1,772-acre Cuellar tract, total depth 1,466 feet, standing (corrected depth); No. 19 Cuellar, Cerrito Blanco grant, location.

R. F. Blankenship's No. 2 Garza, Block 2, Survey 413, 425 feet W line, 425 feet N line, derrick.

Harry L. Fansler's No. 1 F. Cuellar, Survey 285, 150 feet W line, 1,170 feet N line, drilling at 1,668 feet, sand at 1,644-47 feet tested gas, set 6⅝-inch casing at 1,668 feet.

Blair & Acklin's No. 2 Trevino, Block 1, Survey 66, 150 feet W line, 200 feet N line, total depth 1,254 feet, sand 1,-251-54 feet, pulled 6⅝-inch casing at 387 feet, preparing to reset 6⅝-inch casing at 1,251 feet.

R. F. Blankenship's No. 1 Garza, Block 13, Survey 413, 160 feet N and E lines, resumed drilling at 1,510 feet.

South Texas Production Co.'s No. 2 Roy Jennings, Cerrito Blanco grant, 13,-000 feet to NW line, 9,800 feet to SW line, standing at 2,150 feet.

LA.-ARK. FIELDS

(Continued from Page 53)

at any time soon. The reserve is there and it is only a matter of pipe line capacity.

Richland Parish

Richland Parish went through the week without a completion but the several wildcats were rather interesting. Industrial Gas Co.'s No. 1 A. T. Davidson in Section 6-17-7, was coring at 2,614 feet and No. 1-A Jack Davidson in Section 6-16-7, ran into salt water with gas at 2,470 feet and set siphon; No. 1 T. R. Hodge, Section 7-16-7, is waiting for testing tool to run at 2,666 feet to try out something that looks good in the deeper horizon. Triangle Drilling Co.'s No. 1 Crumpton in Section 16-17-7, about 6 miles northeast of production, was dry at 2,492 feet on a test of the Alto horizon and is coring ahead.

Lion Oil Refining Co. is spreading out in several directions, sales, production and refining. For some time it has held a great interest in W. M. Coates' No. 1 McDuffie, Section 32-19-17, Union County, and lately has made some sort of arrangement for continuing operations on that Junction City wildcat which has been inactive since the middle of November when it shut down after a salt water test at 2,071 feet. Operations have been resumed and the last report on it was that it was coring at 4,090 feet. S. Y. Dorfman's No. 1 Simmons in Section 13-16-15, southeast of Smackover production, was dry on a drill stem test of the shallow stuff at 2,044 feet and 2,053 feet and was coring at 2,061 feet. O. W. Estes' No. 1 Telford, 6 miles east and a little south of El Dorado Townsite was bailing to test with 800 feet of oil in the hole, total depth 2,230 feet. It is located in a little shoestring, or isolated pool southeast of El Dorado East Field production.

Simms Oil Co.'s No. 5 Johnson, Section 34-15-15, Ouachita County, Smackover, made a 40-bbl. pumper from the shallow stuff at 1,987 feet and Wilson & Chapman's wildcat in Section 4-17-15, Union County, half way between El Dorado and Smackover, was a salt water hole at 2,525 feet. Border gas territory in east Texas furnished one surprisingly good gasser from the deep stuff when Magnolia Petroleum Co.'s No. 5 Tiller in the Jane Thorpe Survey of Panola County, gauged 15,012,000 feet of gas at 1,325 pounds from 3,186 feet.

Last August Consolidated Carbon Co.'s No. 2 White, Section 16-20-4, Morehouse Parish drilled into some wild gas in the 200-foot water sand and cratered and caught fire. After burning itself out it has been revived, rig has been set up on, it is understood, the old location, and 8-inch casing cemented at 870 feet and the chances are it will make a well. Industrial Gas Co.'s No. 1 Boughton, Section 1-16-6, Richland Parish, this week, staged a similar performance except that it did not catch fire, and was estimated to have made 15,000,000 feet of gas at 2,337 feet, which was successfully mudded off and the hole is drilling at 2,357 feet. The interesting—and intriguing—feature of the incident is the depth at which the blowout occurred. Heretofore most of Richland's "explosions" of this nature have been due to wild gas in shallow fresh water sands adjacent to craters.

Louisiana completions, aside from the Monroe and Richland areas were: Louisiana Gas & Fuel Co.'s No. 4 Thigpen & Herold, Section 12-17-12, Elm Grove, 1,343,000 feet of gas at 680 pounds, total depth 1,738 feet; H. J. Bussa's No. 7 Herndon, Section 15-21-15, Houston district of Caddo, pumping 10 bbls., total depth 1,695 feet; Calates Oil & Gas Co.'s No. 1-A Agurs, Section 7-16-16 Caddo, 6,500,000 feet of gas at 1,000 pounds, total depth 2,975 feet; Standard Oil Co.'s No. 1 Crichton, Section 22-21-10, Cotton Valley, 32,346,000 feet of gas at 1,432 pounds, total depth 4,693 feet.

MISSISSIPPI

Mississippi seems to have come to life again during the past two or three weeks, at least Steffey's report contains more than the routine "shut down" information. Amerada Petroleum Corp. has begun drilling No. 1 Campbell in Section 24-12-2, Yazoo County, in the northern end of the county. It has two blocks in Yazoo, one in the north and the other in the south, taken after the whole area had been surveyed and resurveyed geophysically by its own and other companies' crews.

Steffey says that the Gulf—Home Oil Producing Co.'s (Love and others') trade has been consummated and that the Gulf is to begin drilling before the end of the month. At any rate, Gulf received 5,000 acres from the Home Oil Producing Co. on which a well in Section 13-5-1e, at Jackson, was drilled to 2,512 feet without any overwhelmingly favorable results which, added to 7,000 acres in its own right gives it quite a foothold should anything develop. Besides having had a geologist in Mississippi for the past two or three years, Gulf last summer moved a staff of half a dozen or so geologists and "witcher" men into this area and has just recently transferred Tommy McAteer, its star man in Arkansas, to Meridian to keep track of what's going on there in place of Ed Warren, promoted to a better job elsewhere. Gossip around Meridian and Jackson seems to favor the Gulf getting real busy in a drilling way and the trade with Home Oil Producing Co. (Love) doesn't exactly discount that idea. Love shut down at around 1,700 feet a week ago in the Wilcox.

Gas in West Carroll Parish, Louisiana, seems to have encouraged further exploration in the vicinity of Natchez and Carter Oil Co., already interested in Yalobusha County, is reported to have sent a rockhound to Natchez to have a look at things.

It depends upon what A. F. Crider, geologist, and A. G. Glassell, one of the backers, both of Shreveport, think of the prospects whether Lincoln Oil & Gas Co. listens to their drilling contractor, H. H. Mehaffey, and backs up to 1,600 feet for a test of what Mehaffey claims was a gas show at around 1,600 feet, total depth is 2,250 feet. The well is No. 1 Pat Case, Section 8-21-6, Lincoln County.

Lauderdale Oil & Gas Co. plans drilling plug and testing No. 1 Lackey, Section 2-7-10, Lauderdale County, about January 15, on which casing was cemented at 2,795 feet after an oil sand from 2,809-16 feet. Failing here, the hole will be taken on down to contract depth of 3,500 feet, the deepest test this area has had so far. Ampry Petroleum Co.'s No. 1 Hall, Section 8-13-17, Monroe County, is in shale at 2,333 feet, second hole, and Amory Development Co.'s No. 1 Bourland, Section 2-13-19, Monroe County, is drilling at 2,909 feet with 100 feet to go before contract depth is reached.

A. D. Morton and others are moving in to drill No. 1 O'Neill heirs in the NW SE, Section 8-2-13, Lauderdale County, Alabama, and S. A. Hobson is drilling lime at 850 feet on No. 1 Wilson, Section 27-7-1w, Washington County. In northwestern Alabama Briggs & Knapp's No. 1 Wefel, Section 25-12-14, Lamar County, east of the Amory, Miss., development, are arranging to swab for a test at around 1,700 feet.

PRODUCTION

Daily average production of the pools in this area for the last week follow:

LOUISIANA

	Bbls.
Caddo, light	9,905
Caddo, heavy	2,920
Homer	3,870
Haynesville	4,640
DeSoto-Red River	3,000
Elm Grove	520
Bellevue	620
Cotton Valley	2,290
Urania	5,190
Pleasant Hill	795
Sarepta	785
Zwolle	3,765
Total	38,300

ARKANSAS

El Dorado	4,310
Smackover, light	5,625
Smackover, heavy	42,050
Stephens	1,000
Nevada County	1,110
Lisbon	1,050
Champagnolle	5,155
Bradley	85
Total	60,385
Both states	98,685
Last week	98,605
Increase	80

CALIFORNIA FIELDS

(Continued from Page 61)

Bankline with 1,517 bbls., Caroline Spaulding with 1,475 bbls. and the Seaward Oil Co. with 956 bbls. The potential daily production of the Barnsdall and Rio Grande in this field is 34,260 bbls., while that of the Pacific Western is fixed at 7,220 bbls. At the close of the past week work had been suspended on eight projects in accordance with the curtailment agreement covering operations in the Elwood Field. The Barnsdall and Rio Grande was actually making hole in two wells while the Bankline and Elwood Exploration were each running one string of tools. George F. Getty expects to finish another producing well in the Summerland Field of Santa Barbara County some time within the next few weeks as he is rotating ahead in No. 1 Seaside Fee at 1,990 feet. This project will probably be followed into production by well No. 11 on tideland drilling permit No. 16, as the bit in this hole is already down 750 feet. The Standard Oil Co. is making preparations to test out No. 2 Edwards, a wildcat west of the Elwood Field, following the coring of 10 feet of oil sand in the Sespe between 1,-969 feet and 1,979 feet. The production test is scheduled to be made some time within the next few days as the cement is at present being drilled out of the 13⅜-inch landed at 1,965 feet. The General Petroleum has found it necessary to resort to heavily fortified mud in order to prevent a premature blow out in No. 2 More, a second test being drilled at Goleta some 5 miles east of Elwood, but drilling is still going ahead.

Long Beach

Three completions were chalked up in the Long Beach Field of Los Angeles Basin during the past week and 14 new wells were either already spudded in or making preparations for early work at the conclusion of the same period. Most of the new work undertaken was located in the southeastern end of the field where interest has been revived by the completion of several substantial flowing wells during the past six months. Dabney & Johnston have four new rigs nearing completion in this area, while The Texas Company, George F. Getty, Petroleum Securities, Rawco Oil Co., Keck Syndicate, Pan Cal Oil Co., Carter Petroleum and two or three others are each erecting one new rig. New wells actually spudded in at Long Beach during the past week include the California Ventura Oil Co.'s No. 1 Preston and No. 5 Signal of the James Oil Co. Two of the new wells completed in this field during the past week were finished in the deep zone, while one, A. H. MacFarland's No. 1 Signal was brought in from the shallow horizon. This is particularly interesting in view of the fact that the shallowest well finished was producing more than

the aggregate initial daily production of the two deep zone completions combined. This project, which was bottomed at 4,260 feet and finished with a 6⅝-inch liner carrying 115 feet of perforated, showed an initial daily production of 1,480 bbls., the oil being unusually clean and testing 24.5 degrees. No. 28 Municipal of the A. T. Jergins Trust, which was completed at 7,997 feet, was good for 440 bbls. of 26.9 gravity oil daily. The Macmillan Petroleum's No. 9, which was bottomed at 6,022 feet after being plugged back from 6,087 feet, was brought in doing 360 bbls. daily. The output of the latter project, however, is still cutting rather heavily and the company may be obliged to reinforce the bottom plug as it has apparently not accomplished the desired results. A check of current production shows the Shell producing 23,500 bbls. daily at Long Beach, followed by the Richfield Oil Co. with 9,600 bbls. The Texas Company with 8,250 bbls., Dabney & Johnston with 7,300 bbls., Union with 2,450 bbls. and General Petroleum with 1,400 bbls.

Midway-Sunset

The North American Consolidated finished another new well on the Kerckhoff lease out in the Maricopa flats section of the Midway-Sunset Field in Section 8-11-23 and the next several weeks will see the completion of a number of other potential producers. The North American's new producer, which was carried down to 3,208 feet and finished with an 8⅝-inch liner, registered an initial daily production of 590 bbls., the oil being clean and testing 23.1 degrees. The Union Oil Co. is making preparations to bring in No. 1 Son in Section 8-11-23 and commercial production is anticipated upon completion of the test at 3,730 feet. The Standard Oil Co. has three wells nearing completion on the Bonynge lease and this trio, together with three more on fee owned acreage in Section 9-11-23, should be tanking oil within the next few weeks. The North American, Birch Oil Co., Doyle Petroleum, Hancock Oil Co. and Rio Grande are also scheduled to finish one or more new wells in the near future.

The Shell Oil Co. finished well No. 10 on Jewett Lease No. 2 in the Round Mountain Field of Kern County during the week and while this new producer showed an initial of 75 bbls. daily from 1,551 feet, the company has re-entered the hole and will deepen it a little more in the hope of stimulating production. Well No. 2 on Jewett Lease No. 3 will probably also be given an early production test if future developments warrant. Three new wells were started in the Mount Poso Field during the past week and all of them should begin making hole soon. This trio is made up of the Union's No. 10 Tribe, No. 28 Glide of the General Petroleum and No. 1 Mon of the Chanslor-Canfield Midway Oil Co. Three new wells are scheduled for completion in the Fruitvale Field of Kern County and a like number out on the west front of the Kern River Field within the next fifteen days. Those in the former area are No. 1 Brackenbury of the Shell and No. 2-C and No. B-10 of the Western Gulf Oil Co. The potential producers at Kern River are the Richfield's No. 6 in Section 22-28-27, No. 14 Whetmore of the General Petroleum and the Chanslor-Canfield Midway Oil Co.'s No. 30 in Section 23-28-27.

The Standard Oil Co. is conditioning its wells out on the west front section of the Kern River Field with a view to opening up the shut in production of some 30 wells capable of 7,200 bbls. a day. The move is being made as a result of the program of production announced recently by other operators in the field, among which are Petroleum Securities, George F. Getty, Inc., and Richfield Oil Co. Disruption of the shut in agreement comes through pressure exerted by land owners in the area involved. By forcing one company to fulfill lease requirements the land owners are compelling all the companies to produce the oil which is of low gravity and for which there is no available ready market. At present the Standard is planning to open only those wells which are offsets in order to protect their property from drainage.

Rosecrans

The Barnsdall Oil Co. picked up the Zins zone in its No. 1 Trust at Rosecrans several days ago and a string of 9-inch has already been landed and cemented preparatory to an early test. This well, located on a 152-acre tract held at one time by the Union Oil Co., encountered the top of the pay at 5,832 feet and drilling was concluded at 5,848 feet after definitely determining the existence of more than a thin stray sand. Upon the conclusion of drilling 16 feet of oil sand had been cored and if there is any further thickness of oil sand below present bottom, commercial production should be developed. There are 103 producing wells in the Rosecrans Field at the present time, 12 of which are flowing unaided, 38 producing on compressors and 53 pumping. It is interesting to note in this connection that the Barnsdall Oil Co. has 8 of the 12 flowing wells and 12 of the number flowing on compressors. The company likewise heads the production list with a current daily output of 3,000 bbls. and an average daily well production of 130 bbls.

Two more wells were listed for abandonment in the Lawndale Field of Los Angeles Basin during the past week and this area, which witnessed a frenzied intensive town lot campaign immediately following completion of the discovery well of the San Clemente Oil Co., is entirely deserted except for six producing wells and approximately ten inactive drilling projects. A total of 82 dry holes and unproductive wells commercially have been abandoned up to the present time. Current production approximates 1,040 bbls. per day coming from the Pacific Western's No. 2 Howland, flowing 210 bbls., No. 2 Brown of the Petroleum Securities, pumping 50 bbls., No. 1 Peck of the San Clemente, pumping 105 bbls., No. 2 on the same lease, flowing 350 bbls. and the Smith Development Co.'s Nos. 1 and 8 on the Peck lease flowing 150 bbls. and 175 bbls. respectively.

Huntington Beach

One of the most constructive moves planned by the California oil industry to be launched early in January, 1930, and destined to be of great public benefit, will be the installation of a waste water disposal system for the Huntington Beach oil field. Preliminary work looking to this end has just been announced by the department of public information of the California Oil & Gas Association, through which the plans were worked out last year for similar systems now in operation at Santa Fe Springs, Signal Hill and Fullerton, and serving more than a dozen important oil fields. The projected system at Huntington Beach is planned to collect waste water and oil from hundreds of wells in the old and new fields at that place, treat the waste in a settling and purifying plant and divert the clear water into the sea at a point some distance from the city. The oil companies are voluntarily initiating this movement as a means of protecting the water supply of Huntington Beach, Orange and other cities in that district from the possibility of contamination. The present intention is to accumulate all waste fluids in the field, remove the oil from the water and mud, settle the mud and run the water out onto the floor of the ocean through a big conduit. While the plan is still in its preliminary stages, it is the purpose of the operating companies to pool their interests, build the system and prorate the cost of operation, such as has been done in other areas. At a meeting of petroleum engineers several weeks ago committees were charged with the duty of working out details for the proposed system. The plans, together with cost estimates and maps of proposed routes, are now about ready for consideration and it is expected that these can be submitted to a meeting of oil operators within the next two or three weeks. Two new wells are getting under way in the Huntington Beach Field at the present time, both of them standing to the credit of the Richfield Oil Co. These projects, No. 2 Dieter Golay and No. 1 Heaston, are being rigged up with spud scheduled for late next week.

Potrero

The Pacific Southwest Development Co. has apparently proven up the existence of a second productive horizon in the town lot section of the Poterero Field of Los Angeles Basin but it is too early to venture an opinion one way or the other as to its possible productivity. No. 1 Bergman, the discovery well, showed an initial of 500 bbls. daily from 4,753 feet with a 6⅝-inch water string landed and cemented at 4,676 feet but the well failed to maintain a sustained natural flow and the company is making preparations to install a compressor. The Sunset Pacific Oil Co. should be the next concern to test out the potentiality of the second zone in the town lot area at Potrero as its No. 2 Inglewood Community is drilling ahead in what looks to be a rather lean oil sand at 4,865 feet. The Globe Lease & Royalty Co. finished its No. 6 Potrero in the upper sand during the early part of the week and it registered an initial of 300 bbls. daily from 3,844 feet. The output of this project, like other wells in the town lot section, is showing a cut of approximately 25 per cent. The only well free from water trouble in this area at the present time is York and Lockhart's No. 2 Potrero, which is pumping 65 bbls. of clean 48.3 gravity oil.

Ventura

The Shell Oil Co. finished a nice well at Ventura Avenue during the past week when No. 47 Taylor in the western part of the field was brought in under a natural flow doing 1,550 bbls. of 29.5 gravity oil daily from 7,076 feet. The Shell has two more wells scheduled for early completion on the Taylor lease at Ventura Avenue and a check indicates the probability that the Associated will also increase its list of producers as No. 125 Lloyd is rotating ahead in a good oil sand at 7,675 feet. The Bolsa Chica Oil Co. recompleted No. 5 Hartman doing 1,600 bbls. of oil and 1,500,000 feet of natural gas daily during the early part of the week but water subsequently broke in and may necessitate another cement job. During the month of December the Associated produced 28,050 bbls. of oil and 76,159,000 feet of natural gas in the Ventura Avenue Field, according to Umpire Grimm's curtailment report, indicating a daily excess of 3,619,000 feet of natural gas. The Shell produced 16,608 bbls. of crude oil and 58,969,000 feet of natural gas daily. This is 4,549,000 feet of natural gas per day in excess of the allowable gas production. As has already been mentioned, operators in the Ventura Avenue Field are effecting crude oil curtailment by regulating the production of gas. The total excess gas production during December only approximated 18,252,000 feet, indicating a very substantial improvement over conditions existing a month ago when more than 100,000,000 feet was being blown into the air daily. The General Petroleum produced 1,082 bbls. of crude oil daily, Pacific Western 3,977 bbls., M. K. T. Oil Co. 1,082 bbls. and the Bolsa Chica Oil Co. 587 bbls. daily. The General Petroleum is making fairly good footage in No. 2 Ferguson, a tideland drilling project in the Rincon Field, and future work will be watched with interest as this well, located at the end of a 1,700-foot pier, should determine the possibility of developing commercial production out in the open ocean. The Chanslor-Canfield Midway Oil Co. has four wells under way on the Hobson lease in this field at the present time, No. 6 on Hobson Lease C having just been spudded in.

GULF COAST FIELDS

(Continued from Page 57)

screen in Nos. 3 and 4, but so far these have not been completed.

Port Barre Extension

Gulf Refining Co. extended production at the new Port Barre Dome, St. Landry Parish, Louisiana, by its No. 1 Hoskins, Section 4-6s-5e. This well, however, is good for only 100 bbls. daily from a sand slightly below 3,400 feet. This is the third successful completion on that dome.

Other completions of the week were: Independent Oil & Gas Co.'s No. 4 Reilly, Refugio, flowing 150 bbls. pipe line oil, 3,694 feet; the same company's No. 1-A J. F. B. Heard, Refugio, dry gas, 3,680 feet; Humble Oil & Refining Co.'s No. 2-B Sugarland, DeWalt, 560 bbls. oil, 3,772 feet; Empire Gas & Fuel Co.'s No. 10 Groggan, Liberty, 300 bbls. fluid, 10 per cent oil, 3,591 feet; Empire Gas & Fuel Co.'s No. 30 Barngrover, Hull, 600 bbls., 3,917 feet; Republic Production Co.'s No. 122 Dolbear, Hull, a workover, pumping 300 bbls. fluid, 20 per cent oil; Ada Belle Oil Co.'s No. 130 Carlton, Batson, a small shallow pumper; Vinton Petroleum Co.'s No. 7 Gray, Vinton, a workover, pumping 20 bbls. net 2,811 feet; Yount Lee Oil Co.'s No. 108 McFaddin, Spindletop, initial 1,325 bbls., 4,110 feet, and the same company's Nos. 45 and 71 McFaddin, both workovers, and Rio Bravo Oil Co.'s No. 86-A Cotton, Saratoga, flowing 50 bbls., 558 feet.

Humble Oil & Refining Co.'s wildcat, No. 2 Woodburn, on the Genoa Dome prospect southeast of Houston, Saturday was trying to make a drill stem test of a hard sand showing gas at 3,864 feet. This wildcat has been deepened from 3,467 feet, where it was completed in December making an estimated 15,000 feet of gas.

Three wildcats now drilling at Mykawa, south of Houston, are taking considerable interest of operators. Humble's No. 1 Siadous, which made a gasser at 3,453 feet, but which is being deepened, is drilling below 3,948 feet. Watts Brothers' No. 1 Hubert has drilled into Oligocene and is going deeper in shale at 4,366 feet. Higgin Oil & Fuel Co.'s No. 1 Siadous, which also is getting deep, tested salt water at 4,131-47 feet.

Daily Average Production

Daily average production of coastal fields the week ending January 4 was:

Texas

Allen	10
Barbers Hill	16,529
Batson	1,287
Big Creek	7,703
Blue Ridge	1,982
Brenham	140
Boling	1,159
Clay Creek	1,847
Damon Mound	512
DeWalt	12,263
Fannette	1,687
Goose Creek	5,194
Hankamer	50
High Island	1,370
Hull	9,998
Humble	10,358
Jasper County	25
Lost Lake	830
Markham	372
Moss Bluff	190
Nash	525
North Dayton	2,000
Orange	2,715
Orchard	84
Pierce Junction	11,646
Port Neches	3,125
Raccoon Bend	8,885
Refugio	18,771
Sheeks	653
Saratoga	997
Sour Lake	2,422
South Liberty-South Dayton	6,416
Spindletop	18,777
West Columbia	6,394
Total	156,916
Week ending December 28	157,842
Decrease	926

South Louisiana

Anse La Butte	45
Bayou Bouillon	80
Black Bayou	50
Dog Lake	5
Edgerly	849
Jennings	3,062
Hackberry	3,510
Lake Barre	306
Lake Pelto	213
Lockport	3,108
New Iberia	12
Port Barre	210
Sorrento	140
Starks	546
Sulphur	3,400
Sweet Lake	23
Vinton	4,344
Welsh	242
White Castle	346
Total	20,500
Week ending December 28	18,555
Increase	1,945
Total Gulf Coast	177,416
Week ending December 28	176,397
Increase	1,019

CANADIAN FIELDS

(Continued from Page 58)

crease production, which is reported steady at 100 bbls. a day. Settled production will possibly be somewhat less. Analysis of the product has been made by W. P. Campbell and C. W. Dingman of the government supervisory mining engineer's office at Calgary. Their report states that the gravity is 78.8 at 60° F. and that the oil has a sweet odor and a pale greenish-yellow color. The report says: "The crude is exceedingly volatile at relatively low pressure. It is practically 100 per cent within the gasoline range, but the presence of so much of the low boiling compounds would very materially reduce the quantity of gasoline recovered in practice." Analysis shows methane, 83.1 per cent; ethane, 15.4; carbon dioxide, 1.2; nitrogen, 3. There is no oxygen. The percentage over at the initial boiling of 19° C. or 66° F. is 10 per cent; and at 141° C. or 286° F. the percentage is over 89.5.

South Turner Valley

In the South Turner Valley, East Crest Oil Co.'s No. 1, LSD 5-6, Section 16-19-2w5, is 100 feet in the lime at 4,412 feet and fishing for drill rods. The well is making around 8,000,000 feet of gas. East Crest's No. 2, LSD 4, is cementing 8¼-inch casing on top of the Dalhousie sand at 3,200 feet, with a strong gas flow reported.

Wellington Oils' No. 1, LSD 1, Section 20-19-2w5, is resuming drilling after cementing in the top of the lime at 4,657 feet.

In Section 4-19-2w5, Miracle Oils' No. 1, LSD 11, is drilling below 3,700 feet. Mill City Petroleums' No. 1, LSD 14, is reported drilling at 3,923 feet. Hylo Oils' No. 1, LSD 12, is shut down at 1,878 feet. Mercury Oils' No. 5 is drilling at 1,400 feet. Spray Oils' No. 1, LSD 9, Section 5-19-2w5, is reported drilling at 1,938 feet.

In Section 20-19-2w5, Calmont Oils' No. 2, LSD 11, is at 4,057 feet after cementing back. Calmont's No. 7, same LSD, is drilling at 2,040 feet; and No. 8 at 435 feet. Freehold Oil Corp.'s No. 2, LSD 8, is drilling at 4,110 feet; and No. 3, same LSD, is reported practically ready to spud in.

Homestead Oils' No. 1, LSD 5, Section 16-19-2w5, is close to the lime at 3,980 feet with 10-inch casing run to the bottom.

Imperial Tests

Among the Imperial tests in the South Turner Valley, Mayland Oil Co.'s No. 1, LSD 10, Section 17-19-2w5, is in a fair way toward establishing a deep drilling record. At last reports it was drilling 584 feet in the lime at 6,025 feet. Foothills Oil & Gas Co.'s No. 3 (South West Petroleums), LSD 16, Section 8-19-2w5, is cleaning out at 5,517 feet, due to caving after reaching 5,915-foot depth. At this depth it was 437 feet in the lime and starting to deepen after an unsatisfactory production test. Home Oil Co.'s No. 4, LSD 14, Section 20-19-2w5, is drilling in the lime at 5,444 feet. Sterling Pacific Oil Co.'s No. 1, LSD 15, Section 33-18-2w5, is drilling 214 feet in the lime at 5,367 feet, with some increase in wet gas production.

Royalite Oil Co.'s No. 25, Section 29-19-2w5, north of the Home wells, is rigging up. Southern Lowery Petroleums' No. 1 (formerly Royalite's No. 24), LSD 3, Section 9-19-2w5, is resuming at 356 feet after cementing. Home Oil Co.'s No. 5, LSD 7, Section 20-19-2w5, is drilling at 3,495 feet. Home's No. 6, same section, is 360 feet and drilling. Baltac Oils' No. 1, LSD 13, same section, is drilling at 5,181 feet. Hargal Oils' No. 1, same section, is drilling at 4,711 feet. Northwest-Associated's No. 2, LSD 6, same section, is at 2,025 feet and drilling.

Mayland Oil Co.'s No. 2, LSD 8, Section 17-19-2w5, is drilling at 3,748 feet; and No. 3, same section, at 3,981 feet. Lowery Petroleums' No. 1, NW Section 17-19-2w5, is at 4,796 feet and drilling. Advance Oil Co.'s No. 5-A, LSD 16, Section 19-19-2w5, is drilling at 3,662 feet.

In the Central Turner Valley, Royalite Oil Co.'s No. 7, LSD 3, Section 13-20-2w5, is rigging up diamond drill to clean out and restore production. At 4,280 feet the well made 2,900 bbls. in October and dropped to 96 bbls. in November due to freezing. It may be deepened.

Royalite's No. 12, LSD 3, Section 13-20-3w5, is at 5,419 feet in the top of the lime and waiting for diamond drill. Royalite's No. 19, LSD 5, Section 6-20-2w5, is at 4,623 feet and working on control head. Royalite's No. 16, LSD 2, Section 12-20-3w5, is testing production 1,289 feet in the lime at 6,000 feet depth. Royalite's No. 14, LSD 4, Section 7-20-2w5, is at 3,688 feet and preparing to circulate with mud. Royalite's No. 21, LSD 1, Section 13-20-3w5, is drilling 534 feet in the lime at 4,842 feet. Royalite's No. 23, NW, Section 31-19-2w5, is working on casing at 5,089 feet.

Dalhousie Oil Co.'s No. 7, LSD 11, Section 18-20-2w5, is fishing for tools before resuming drilling at 4,466 feet, the depth reached when the outfit was destroyed by fire.

Central Turner Valley

In the Central Turner Valley, British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is the center of interest. It is approximately 120 feet in the lime, around 5,184 feet depth, with what looks like a fair crude naphtha recovery. An intermediate production test at about 5,167 feet gave 46 bbls. of crude naphtha in 24 hours without any special effort to force production, and a further test at the present depth, which is being continued, indicated around 70 bbls. a day. The wet gas flow is between 6,000,000 and 7,000,000 feet. British Dominion's No. 1, in Section 7-20-2w5, was apparently drilled off structure and after going to 6,600 feet without hitting the lime was abandoned. No. 2 was located on a 20-acre tract subleased from the McDougall-Segur interest; completion of a producer entitles the company to additional acreage. No. 2 was put down with cable tools and encountered crude oil shows in the McDougall-Segur, Home and Dalhousie sands, and has been taking production from these horizons by means of a bradenhead control between the 6¾ and 8¼-inch casings.

Calmont Oils' No. 1, LSD 2, Section 1-20-3w5, is rigging up to resume at 5,300 feet. McLeod Oil Co.'s No. 5, LSD 15, same section, is working on casing at 2,155 feet. Sioux City Oils' No. 1, LSD 10, is drilling 13-inch hole at 2,952 feet. Okalta Oils' No. 2, LSD 8, is drilling at 4,370 feet. Okalta's No. 3, LSD 9, is drilling at 3,079 feet. New McDougall-Segur Oil Co.'s No. 3, LSD 14, Section 12-20-3w5, is drilling at 3,937 feet; and No. 4 near the top of the Dalhousie sands at 4,170 feet. Structure Oil & Gas' No. 1, LSD 7, Section 31-19-2w5, is drilling at 2,462 feet; and Mid-Royal Oils' No. 1, LSD 4, at 2,030 feet.

North Turner Valley

In the North Turner Valley, Model Oils' No. 1, LSD 8, Section 22-20-3w5, is drilling in the lower Fernie shales at 5,530 feet. Dome Oils' No. 1, Section 24-20-3w5, is drilling at 5,237 feet. Turner Basin Oils' No. 3, LSD 2, Section 27-20-3w5, is at 3,450 feet drilling and carrying 10-inch casing.

Invader Oils' No. 1, LSD 10, Section 9-21-3w5, the northernmost test in the Turner Valley, has entered the Dakotas, getting a further show of heavy green crude in that horizon at 3,825 feet. Several small strikes of similar crude were encountered in the Benton shales.

On the New Black Diamond structure, west of Turner Valley, Weymarn Petroleum's No. 1, LSD 1, Section 3-20-3w5, the only test active, is drilling below 3,485 feet.

Waite Valley Operations

In the Waite Valley, Richfield Petroleum's No. 1, Section 35-20-3w5, is reported rigging up to resume at 3,708, following destruction of the outfit by fire. Calgary Development & Production Corp.'s No. 1, LSD 10, Section 21-19-3w5, has resumed drilling at 2,035 feet. Anglo-Pacific Oils' No. 1, LSD 4, Section 27-19-3w5, is drilling at 675 feet. Brock Petroleum's No. 1, LSD 2, Section 35-21-4w5, is at 3,083 feet and drilling. Angus Oils' No. 1, LSD 5, Section 3-21-4w5, is drilling in the Dakotas at 1,532 feet. Innerfold Oils' No. 1, LSD 2, Section 6-20-3w5, is drilling at 3,505 feet.

Sinclair-Highwood Drilling

On the Sinclair-Highwood structure, south of Turner Valley, Hudson's Bay Oil & Gas Co.'s No. 1, LSD 8, Section 1-18-3w5, is at 1,240 feet and drilling. Northwest-C. & E.'s No. 1, LSD 8, Section 35-18-3w5, is drilling at 760 feet.

Warner Oils' No. 3, LSD 3, Section 28-18-3w5, has resumed drilling and is making hole for 13⅜-inch casing after cementing 16-inch at 740 feet. Western Alberta Oil Co.'s No. 1, LSD 11, Section 7-17-2w5, is drilling around 3,000 feet. Banner Oils' No. 1, LSD 6, Section 34-17-3w5, is resuming at 553 feet after a week's shutdown for the holiday season.

In the Moose Mountain district, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is drilling in hard formation around 3,700 feet. Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is drilling at 2,992 feet.

In the Morley Reserve area, Wabash Oils' No. 1 is drilling close to 3,000 feet. Norcon Oil Co.'s No. 1 is shut down, probably till spring, at 1,593 feet.

On the Moose Dome, Moose Oils' No. 1, LSD 16, Section 29-22-6w5, is at 1,610 feet and drilling after encountering a further small gas flow in the Devonian.

On the Herron structure, Herron Petroleum's No. 1, Section 13-22-6w5, is drilling around 1,000 feet.

In the High River-Aldersyde area, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is drilling at 3,975 feet with further small shows of oil. High River Oils' No. 1, LSD 6, Section 34-18-29w4, is at 269 feet and shut down waiting for better weather. Twin Dome Oils' No. 1, Section 16-21-28w4, is drilling at 1,293 feet with some shows of crude.

Border Fields

In the Red Coulee Field, heavy snow and cold weather interfered with drilling operations, and production from Vanalta Oils' No. 1 was temporarily suspended owing to fuel shortage. The same conditions were pretty general throughout the border areas of southern Alberta. On the Montana side, Monalta Oil Co.'s No. 1 was reported resuming at 2,315 feet after a shutdown, and planning to cement 8¼-inch casing at 2,350 feet before drilling into the Sunburst sand. Mid-Continent Oil & Refining Co.'s No. 1, NE, Section 2-37-4w, was reported preparing to resume near the top of the Sunburst. This test, offsetting Vanalta's No. 1 producer, got the Vanalta gas sand at 2,250 feet and cemented 8¼-inch casing before drilling to the oil sand. Cosmos' No. 1 is reported drilling around 1,900 feet.

On the Alberta end of the Red Coulee structure, Ko Top Oils' No. 1, Section 2-1-17w4, is reported drilling below 1,000 feet after encountering some gas at 750 feet. The gas was followed by water, and two cementing jobs were required to shut it off. Vanalta Oils' No. 2, LSD 3, Section 4-1-16w4, is shut down around 600 feet. Operators on the Montana side had made arrangements to utilize gas from Vanalta's No. 1 for drilling, but the standing prohibition of gas export from Canada prevented this. Calmont Oils, Ltd., of Calgary, has secured a section less 40 acres in Township 2-17w4 and will drill in the spring.

In the Skiff Field, Dauntless Oils' No. 1, LSD 9, Section 36-6-15w4, is cleaning out, bailing and testing production.

In the Milk River district, Commonwealth Petroleum's No. 1, LSD 9, Section 9-3-15w4, has resumed drilling after a shutdown due to bad weather. The test is around 3,195 feet. Capitol Oil & Gas Co.'s No. 1-A, LSD 16, Section 32-1-12w4, is drilling around 2,750 feet.

On the Beaver Dome, Madison Oils' No. 2, LSD 10, Section 24-2-11w4, is shut down around 2,000 feet owing to weather conditions.

In the Lomond district, Hudson's Bay Oil & Gas Co.'s No. 2 Lomond, Section 23-17-18w4, is standing cemented at 923 feet.

In the Taber district, Cole-English Syndicate's Taber No. 1, LSD 3, Section 11-10-17w4, is reported below 3,000 feet in drilling. This test, which is being handled for English interests by Campbell M. Hunter without a contractor, has made rapid headway for an untested area, having spudded in September 20. This time included two waits aggregating 16 days for cementing. The oil horizon is looked for at 3,200 feet.

Wainwright Field

In the Wainwright Field, East Central Alberta, operations were slowed down somewhat for the holidays. Oil Selections' No. 1, LSD 13, Section 2-46-7w4, is rigged up and running gas line to spud in early this month. Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, is pumping from the upper sand at 2,072 feet and making around 50 bbls. a day. This production, with that from Wainwell's No. 4, is run through the Wainwell refinery and sold to other concerns for fuel oil. Fabyan Petroleum, Ltd., is reported preparing to start work on No. 3, LSD 16, Section 18-45-7w4, as soon as the weather moderates. The test has derrick up. Further development work with new equipment is to be started in the spring. Wainwright Petroleum's No. 1, LSD 6, Section 30-45-6w4, is cemented on top of an oil sand at 2,246 feet, but will wait for warmer weather before drilling in. Peninsular Petroleum's No. 1, LSD 16, Section 30-45-6w4, is rigged up and running gas line.

Onalta Oils' No. 1, LSD 8, Section 29-45-6w4, is down 1,029 feet with 13-inch casing following the drill. The outfit should get the oil sand this month. Bethwain Oils' No. 2, Section 4-45-6w4, is drilling at 1,890 feet. Weymarn Petroleums, Ltd., has completed a series of structure tests from 175 to 450 feet depth in Section 12-47-5w4, and has ordered standard outfit for a commercial test to be drilled in LSD 14.

Ribstone Field

In the Ribstone Field, Meridian Oils' No. 2, LSD 1, Section 16-45-1w4, is drilling around 1,830 feet. Imperial Oil's Ribstone No. 2, LSD 14, Section 9-45-1w4, is drilling at 1,590 feet. London-Ribstone Syndicate's No. 2, LSD 5, Section 22-43-3w5, is shut down for the winter at 1,900 feet. Oxville Oil & Gas Co.'s No. 1, LSD 14, Section 14-45-2w4, is below 1,800 feet and drilling.

Manitoba Oil Show

In Manitoba, some interest has been aroused by the report that Dauphin Syndicate's No. 1, SE, Section 14-24-20WPM, has struck a show of crude oil at 960 feet. The oil was apparently met in the middle Devonian, and is claimed to be 66.41 gravity, which is comparable to the light crudes of the Turner Valley. Drilling is being continued at around 1,000 feet. A number of shallow oil shows have been reported from the Dauphin district of Manitoba at various times, but drilling so far has not been sufficiently extensive to prove or disprove the possibility of a shallow oil field.

Further north in that section of western Manitoba and eastern Saskatchewan south of The Pas, oil possibilities are once more attracting some attention. The oil history of this area goes back between 20 and 30 years. An oil claim was staked at one time by a German prospector named Brunne, but owing to the territory being forest reserve no drilling could be done. Some 10 years ago the territory was thrown open and a number of claims were staked, and one company took an outfit in and apparently did some drilling. Operations were subsequently abandoned, the drilling outfit being apparently left there. Hamilton and Toronto interests are reported planning to take over the outfit and acreage and resume drilling operations. The field looks like a fairly shallow prospect.

Eastern Canada

In Dover Township, Kent County, Ontario, Acme Oil & Gas Co.'s No. 2 is reported drilling around 2,777 feet after entering the Trenton limestone at 2,772 feet. The test is somewhat higher than Ajax Oil & Gas Co.'s No. 4, which got the Trenton at 2,805 feet and which it offsets. It is running 6¼-inch casing before drilling to the producing horizon.

In the Bothwell Field, Olga Oil & Gas

Co.'s No. 2 deep test is reported drilling around 1,400 feet, after a delay fishing for 8¼-inch casing.

In Dawn Township, Lambton County, drilling operations are suspended owing to weather conditions.

In the province of Quebec, oil seepages are reported to have been discovered in Portneuf County, near the city of Quebec. Some claims have been staked in an area of about 9 miles east and west and extending as far as 12 miles north of the St. Lawrence River. The northern part of Portneuf County is unfavorable to oil and gas, the formations being crystalline and almost entirely of Laurentian age. In the southern part of the county several low and narrow anticlinal ridges exist and the Utica shales are impregnated with oil, but since the anticlines are rather sharp and the formation is generally synclinal any extensive field appears improbable. Oil shows have several times been reported near Pointe aux Trembles, but no drilling has ever been done in this area.

Southern Alberta

In Southern Alberta, Anglo-Dutch Oils, Ltd., of Calgary, has taken over extensive acreage held by Evorne Oils, Ltd. The latter held some 5,217 acres, chiefly in the Waite Valley, Rickert and Highwood districts. Evorne's No. 1, in Section 34-19-4w5, will be completed as Anglo-Dutch's No. 2. Anglo-Dutch's No. 1 will start drilling next spring in SW. Section 18-20-1w4, on the Empress structure close to the Alberta-Saskatchewan boundary. Montreal interests are financing the Anglo-Dutch operations.

Tar Sand Operations

Operations by the Bituminous Sands Extraction Co. in the tar sand district of Northern Alberta are being continued under direction of J. O. Absher. It is claimed that a well is being operated by this process which involves treatment of the sands; and that a production of 25 bbls. a day from shallow wells, around 150 to 250 feet, is possible.

Some progress has also been made by W. P. Hinton and associates with the development of the Laughlin process for separation of crude oil from the tar sands. Experimental plants were operated last year at Edmonton, and more recently the largest of these plants was moved to the Clearwater River, where some trial runs were made before the freeze-up. It is planned to start large-scale operations in the spring.

Surface Owners' Problem

In the Alberta fields, a new source of potential trouble for operators is being developed coincident with the transfer of Alberta's natural resources from the Dominion Government to the province. This is the claim that owners of surface rights have suffered some injustice in connection with oil development. In the granting of surface rights mineral rights were reserved by the Dominion Government and by land and railroad companies, with the exception of certain of the earlier homesteads, where the surface owners controlled the mineral rights.

Under present regulations, operators naturally have the right to come on the land to drill, subject to reasonable compensation for actual damage. As a rule, they have been welcomed by the landowners, to whom fair treatment has been given, and the best of good feeling has been maintained.

An agitation has now been started in some quarters for a change in the present regulations to provide for a royalty to the owner of deeded land, whether homesteaded or purchased. The legality of such a change in the regulations is rather doubtful, and it seems assured that in any event acreage already leased to operators, and rights reserved by railroad and other companies would remain unaffected. After the natural resources are definitely taken over by the Alberta Provincial Government, however, the latter might impose new regulations in connection with future oil and gas leases to be issued under its authority. In the case of the Turner Valley Field, only a small proportion of the acreage is held under leases from the Crown.

KANSAS FIELDS

(Continued from Page 49)

feet. The Prairie Oil & Gas Co.'s No. 1 Smith, SW cor. NW, Section 5-24-11, is a dry hole at 2,129 feet.

Harvey County

Jolly-Ogg Petroleum Co. and Foster's No. 1 Hupp, SE cor. NE, Section 22-23-1w, is a dry hole at 3,220 feet. Jolly-Ogg Petroleum Co.'s No. 1 Schowalter, NE cor., Section 11-24-1w, has been abandoned at 3,450 feet.

McPherson County

Milmac Oil Co. and others' No. 1-A Decker, NW cor., Section 11-20-3w, is a rig going up. Derby Oil Co. has the cellar dug for No. 2 Stuckey, NW cor. NE SE, Section 9-21-3w. No. 1 Giffon, SE cor. SW, Section 11-19-2w, has been completed for 22,250,000 feet of gas in chat 2,889-2,935 feet. Milmac Oil Co. and others' No. 1 Decker, NW cor., Section 11-20-3w, has been abandoned at 1,500 feet.

Rush County

Danciger and others' No. 1 Pivonka, C NE, Section 17-19-17w, is dry and abandoned at 4,148 feet.

Sedgwick County

Shell Petroleum Corp. is preparing to deepen No. 1 Borg, NW cor. NE SW, Section 14-26-2, from 3,219 feet. Smith, Ash and Shell Petroleum Corp. moved material in for No. 1 Tripp, NE cor. SW, Section 22-26-2. Wentz Oil Corp.'s No. 5 Bright, NW cor., NE NW, Section 1-26-1w, Valley Center Pool, has been completed for 43 bbls. in Simpson sand 3,343-45 feet. Gypsy Oil Co.'s No. 4 Hamant, NW cor., Section 14-26-2, made 440 bbls. in sandy lime 3,154-56 feet.

Stevens County

Argus Gas Co.'s No. 1 Carpenter, C NW NW, Section 29-33-36w, made 7,000,000 feet of gas in sand 2,617-2,780 feet.

Sumner County

Dickey and others made location for No. 3 Kratz, SW cor. NW, Section 26-34-2.

CALIFORNIA EXECUTIVES DISCUSS OIL SITUATION

SAN FRANCISCO, Calif., Jan. 4.—Expressing optimism over the outlook for the oil industry, William F. Humphrey, president of the Associated Oil Co., who has just returned from the East, said:

"I see no reason to be unduly concerned about the immediate future of the oil industry in the United States. For some time past the industry has not been in a particularly healthy condition, due primarily to the great overproduction of crude oil in the United States in general and in California in particular. Because of the supply exceeding the demand, stocks of both crude oil and its products have steadily mounted with resultant lower prices and poor returns on investments.

"The overproduction situation has now been adjusted to a considerable extent by co-operative efforts within the industry itself, through the medium of voluntary curtailment programs whereby a considerable portion of the present excess crude oil production may be retained in the ground for future use. The success of present curtailment programs in California, with a resultant decrease in the crude oil production of the State, is a healthy contributing factor toward relieving the present uneconomic condition of the industry generally.

"The constructive efforts of Walter Teagle, K. R. Kingsbury, Axtell J. Byles and E. B. Reeser, in co-operation with other leaders of the industry, to establish a means of retaining our excess oil in the ground for future use of the American people, will go far towards placing the industry on an even keel."

K. R. Kingsbury, president of the Standard Oil Co., said:

"The most encouraging factor in the outlook for the oil industry is the better appreciation among producers of the problems involved in the overproduction of crude oil and realization of the benefits accruing from a balanced supply and demand. As a result of this the California producers have recently for the first time been able by voluntary agreement to curtail production to an extent that has brought supply and demand virtually in balance.

"The general prospects seem quite clearly defined. There is every promise of a normal increase in the demand for California petroleum products. If the curtailment of the overproduction of crude oil continues in effect, there is prosperity ahead, but if there is a return to the condition of great overproduction which created havoc with the California industry and which threatened that of the world, we will have chaos.

"At this time it appears that voluntary curtailment of California production will continue and it is hoped that shortly the courts will sustain the new but as yet nonoperative gas conservation law."

WILBUR IS WATCHING INDUSTRY AID ITSELF

In reply to a California inquiry as to what the Federal Oil Conservation Board is doing at present Secretary Wilbur is quoted as saying:

"It's just sitting by watching the oil industry, with the help of the California gas law, govern itself," said the secretary.

He believes the industry is doing well. He invites one to consider what the condition would be but for the reduction of Kettleman Hills to a process of orderly development—of bringing that enormous production into a market already demoralized by a production hard to handle.

"Four or six states are the producers of petroleum, the others are consumers," remarked the secretary. "Acceptance of the plan presented to the board last year would have opened the door to suggestions of boards, commissions and other forms of government organizations as big as an executive department, with the nonproducing states demanding regulation of the industry in all its branches. Instead of that, the industry is now on top of the pile and not under it. The prospective waste has been prevented and the industry is governing itself."

COMPREHENSIVE WORLD MAP

O. W. Wells, president of the International Map Co., Inc., 90 West Street, New York, has compiled a two-color map of the world showing the principal oil fields, which is probably the most comprehensive map of its kind ever published. Names of oil fields and symbols therefor are printed in red, while for the more important and congested areas larger scale inset maps are used to show greater detail. There are seven of these inset maps on the large map, the insets covering the Mid-Continent, Texas and Gulf Coast area, California, Mexico, Eastern Venezuela and Trinidad, Colombia and Western Venezuela, Persia and Iraq and Baku.

An idea of the detail shown on the map may be gained from the fact on the inset map of the Mid-Continent, Texas and Gulf Coast area, 102 oil fields are shown by name and location in the State of Texas alone.

DETERDING FORECASTS ON OIL

Regarding the outlook for the oil industry in 1930, Sir Henri W. A. Deterding, managing director of the Royal Dutch-Shell groups, cabled Dow, Jones & Co. from St. Moritz as follows: "The outlook can be magnificent if all big companies will co-operate on a fair basis, thus practically guaranteeing consumers large supplies at moderate prices."

OIL IN SOUTH DAKOTA

HOT SPRINGS, S. Dak., Jan. 4.—Oil was struck in the Barker well of the Black Hills Petroleum Co., 27 miles northwest of here this week at a depth of 1,322 feet. The well began gassing about three weeks ago.

PLAN DEEPER DRILLING IN NORTHWEST TEXAS

WICHITA FALLS, Tex., Jan. 4.—Announcement of the appointment of Harry Hines, Northwest Texas operator, as general manager of the Deep Oil Development Co. was made here Wednesday by the executive committee of the board of directors. Mr. Hines, it was announced, has arranged his individual business affairs so as to give all his time to the affairs of the Deep Oil Development Co.

The statement announcing the appointment said:

"The directors of the Deep Oil Development Co. at their first meeting some two weeks ago elected an executive committee to complete the organization of the company. They also were charged with the duty of selecting a general manager for the enterprise.

"This committee consists of Frank Kell, N. H. Martin, J. F. O'Donohoe, J. S. Bridwell, W. B. Hamilton, J. J. Perkins and James E. McKanna."

Five counties of Northwest Texas in the area of Wichita Falls are interested. During the closing months of 1929 the Deep Oil Development Co., a $1,000,000 corporation chartered under the laws of Delaware, for the purpose of making tests in Wichita, Archer, Clay, Young and Wilbarger Counties in a search for oil sands beneath the 14 sands already proved to exist in the area at shallower depths. The proposal first was presented to a group of citizens by Frank Kell, Wichita Falls financier, during the late fall. Within six weeks plans for the organization were completed, subscriptions to approximately $700,000 worth of the stock were reported received and officers and directors elected. Announcement that the incorporation had been completed was made December 28.

Those chosen as officers of the company were Frank Kell, chairman of the board of directors; N. H. Martin, president; J. J. Perkins and J. S. Bridwell, Wichita Falls, vice presidents; Sam Householder of Byers, treasurer, and J. D. Bright, temporary secretary; J. F. O'Donohoe, James E. McKanna, W. B. Hamilton, Harry Hines, and Messrs. Bridwell, Perkins, Kell and Martin executive committee.

The officers were chosen after the stockholders had previously elected the following board of directors:

From Wichita Falls—Messrs. Kell, Martin, Perkins, Bridwell, Hines, McKanna, Hamilton, John Hirschi, J. I. Staley, W. M. McGregor, J. F. O'Donohoe and J. T. Harrell.

From Wichita County at Large—A. T. McDannald of Electra, and W. L. Hodges of Iowa Park.

From Clay County—Dr. A. B. Edwards of Henrietta and Mr. Householder of Byers.

From Archer County—Tad B. Wilson of Archer City and S. G. Helm of Dundee.

From Young County—E. W. Hunt and O. T. Anderson, both of Olney.

Two places were held open on the board for Wilbarger County representatives, the directors being given authority to elect them.

OIL WELL SUPPLY CHANGES

PITTSBURGH, Pa., Jan. 4.—The resignation of Walter C. Carroll and S. Clarke Reed, officers of the Oil Well Supply Co., have been announced. Mr. Carroll was chairman of the board of directors and Mr. Reed was vice president and a director. No reason was given.

TO STABILIZE MOTOR INDUSTRY

Among changes necessary for stabilization of automobile industry J. W. Scoville, statistician, recommends abolition of annual New York automobile show on grounds New York buys fewer cars per 1,000 population than any other large city in the country. He recommends lowering prices in winter and increasing them in summer to stabilize buying.

Practical Suggestions in Refining

By W. T. Ziegenhain

Thermal Properties Of Petroleum Oils Outlined in Booklet

A systematic and complete set of data is being assembled by the Bureau of Standards covering the thermal properties of petroleum products and a preliminary report has been issued as miscellaneous publication number 97 in which the following formulae appear. The work has been undertaken as part of the American Petroleum Institute's general research program and the financing of this project is being carried out through the $250,000 gift of John D. Rockefeller. Additional research work on the subject is in progress but the results of the work thus far completed have been sufficiently well tried to be recommended for practical use within the limitations of temperatures and oil gravities cited.

Total Heat of Combustion at Constant Volume

The empirical formula used to express the total heat of combustion at a constant volume in B.t.u. per pound of the oil is

$$\text{Total heat} = 22{,}320 - 3{,}780d^2$$

Expressed as B.t.u. per gallon the equation becomes

$$\text{Total heat} = 186{,}087d - 31{,}515d^2$$

In each case d is the specific gravity of the oil at 60° F. The two equations hold for all oils between .51 and .99 specific gravity and the results are within an accuracy range of 1 per cent.

Specific Volume of Vapor

The specific volume of oil vapors as a function of the specific gravities of the oils is expressed as cubic feet per pound and the following formula has been found applicable for oils between .51 and .8 specific gravity and its estimated accuracy is within 10 per cent. The following formula is suggested for practical use and the result is in cubic feet per pound:

$$\text{Sp. vol. of vapor} = \frac{.242(t+460)}{p} \times \frac{(1.03-d)}{d}$$

In this formula d is again the specific gravity of the liquid at 60° F. and p is the absolute pressure in pounds per square inch.

Thermal Conductivity of a Liquid

The following formula was evolved for expressing the thermal conductivity of a liquid as a function of the temperature and gravity of the liquid. It is applicable in cases where the specific gravity of the oil lies between .78 and .95 and between the temperatures of 32 and 400° F. The formula follows:

$$\text{Ther. cond.} = \left(\frac{\text{B.t.u. in.}}{\text{ft.}^2\ \text{hr.}\ °\text{F.}}\right) = \frac{.813}{d}[1-.0003(t-32)]$$

Specific Heat of Liquid

The specific heats of oil of different gravities and at different temperatures has been found to be best expressed by the following formulae and the equations are applicable on all petroleum oils be-

(Continued on Page 129)

DETERMINE RELATIVE REFINING VALUES OF ALL CRUDES MONTHLY

Many refiners are located on pipe line systems which connect pools of crude of widely different characteristics and it is often possible to arrange for the delivery of one of these crudes to the refinery in preference to taking the pipe line run or continuously taking the crude from the same pool. Changing conditions in the market structure of the refined oil prices cause one crude to yield a higher refinery margin under one set of conditions and another crude a higher revenue under other conditions. For this reason, where a choice may be made from time to time, it is advisable to set up some sort of a standardized method of comparison, and the method outlined below has been found convenient and sufficiently accurate to serve as a basis for justifying a change.

The basing of the price of the crude in accordance with its gravity is intended to establish a convenient means of evaluating the crude from a refining standpoint but the method is too general to serve as a true index of the refining values of individual crudes, especially if certain properties distinguish them as favorable for the manufacture of cylinder stock and other lubricating oils.

Post by Fields

The posting of different sets of prices in the various fields helps to show their relative refining values but the difference is usually due to the relative nearness of the fields to a market, the sulphur content of the crudes, wax content, chemical composition, etc. In a similar manner, the pricing of crudes in the various parts of the country on this basis does not accurately reflect the true refining value of certain of them to a refiner who is operating under special conditions in some other section.

As an example, a refiner may find it profitable to pay a premium or a high transportation cost to get a wax-free crude from a distant field to run with his regular supply to lower the cold test of his lub products. Then, too, certain crudes may carry a low posted price because there is flush production or because the sulphur or some other characteristic content is objectionable.

Even if the crude is objectionable, oftentimes a certain percentage of it may be blended into the regular run without materially affecting the refinery operations or the quality of the finished products. For these reasons, it is advisable to establish a periodic report or survey and work up a realization on each crude that could be run, and then to compare these results. A small difference would not justify a change, and, if that difference is due to temporary market conditions, it may not be advisable to make a change, but when, month after month, one crude consistently shows a greater refinery margin than the one being run, a change could no doubt be made to advantage until it is seen that conditions have again changed to justify something else. A monthly report seems advisable and a new set of realizations should also be worked out each time there is a general revision of crude prices.

A simple form and example appears below and such a realization should be worked out for each crude. The yields of the various products for each crude remains sufficiently constant that the same yields may be used from month to month. It becomes an easy matter then to supply a set of refined oil prices and arrive at an answer in a routine way and with a little guidance from time to time, the report may be made out by someone unfamiliar with all of its parts. The yields may be the result of actually running the crude in the plant or it may be based on a laboratory distillation test with the theoretical results modified to fit those expected in actual practice.

Form Used

The form used for the realization may contain such data as shown here.

Margin Per Barrel Running Seminole Crude in Tulsa Plant and Using Present Spot Sales Prices

(Plant balanced to skim and crack 5,000 bbls. crude daily)

Yield, product—		Price	Revenue per bbl.
72.0%	Gasoline (U.S.M.)	$0.06½	$1.97
5.0%	Kerosene	.04¼	.09
8.0%	Distillate	.03⅜	.13
6.0%	Coke	2.00 ton	.02
9.0%	Loss and gas		
100.0%	Gross revenue per barrel		$2.21
	Posted crude price	$1.60	
	Pipe line charge	.15	
	Manufacturing cost	.28	
	Maintenance	.04	
	Plant expense		$2.07
	Plant margin		$0.14

Summary of Results

In a similar manner, the plant margin may be determined for other crudes and the results tabulated in a form similar to the following one:

Summary of Plant Margins Running Following Crudes in Tulsa, Okla., Refinery Basis Present Spot Market Prices.

Crude—	Gravity	Del. charge	Cost del. at plant	Mfg. exp.	Marg. per bbl.
Seminole, Okl.	39-40	$.15	$1.75	$.32	$.14
Cushing, Okl.	37-38	.12	1.62	.30	.08
Winkler, Tex.	29-30	.52	1.42	.38	.02
Ok. City, Okl.	38-39	.25	1.80	.28	.14

The above figures are not intended as representative of actual conditions but used simply as an example of the manner in which the data may be tabulated in a simple form.

Sometimes a correction for the difference in the amount of natural gasoline used with the various crudes is necessary. This is particularly true when the price of natural gasoline delivered at the plant is substantially under or above the spot price for the gasoline sold at the plant.

Sometimes it is also desirable to make two sets of margins, one showing the plant margin skimming and the other a margin combining the skimming and cracking operation. The difference in the margins for any crude will show the profit or loss from a cracking operation, but, under the present conditions and for the greater share of the time in the past, it has been very profitable to crack and only a very material increase in the value of fuel oil and gas oil, without a corresponding increase in the value of gasoline, could alter present conditions.

The above comparison of margins does not take into account sales, expense, overhead and other indirect expenses because they are about the same for all crudes, but there are certain factors which must be considered which are necessarily omitted. The dependability of a supply may be a factor, the high cold test of the fuel oil produced may render a certain crude undesirable for running during the winter months, etc., all of which will influence the final recommendation.

Recent Patents

USE STEAM TO VAPORIZE HEAVY FRACTIONS

1,733,651. Apparatus for Treating Petroleum Oils. Aubrey D. David, Chicago, Ill., assignor to the Universal Oil Products Co., Chicago, Ill., a corporation of South Dakota. Filed February 7, 1923. Serial No. 617,448. Renewed June 2, 1927. 3 Claims. (Cl. 196—99.)

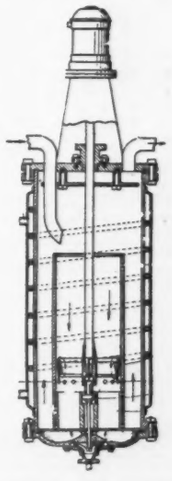
3. An improvement in an oil cracking apparatus comprising inner and outer concentric heating tubes disposed within a furnace, means for supplying a relatively refractory oil from one source to the inlet of the outer tube passing separate streams of oil and water in confinement in countercurrent flow and out of direct contact with flue gases of constantly increasing temperatures, preheating said stream of oil and converting said water into steam, superheating the stream of steam and vaporizing the oil at points where the flue gases are of sufficient temperatures, removing and condensing vapors of said oil, and reacting on the residual oil with said superheated steam at a point in the flow of said flue gases where the temperature is at a maximum and sufficient to convert a substantial portion of said residual oil into gas.

4. An apparatus for treating oil, comprising within a furnace, a combustion chamber and a series of heating zones connected thereto for receiving hot gases in series from said chamber, a gas retort, an oil still, a steam superheater, a boiler, and oil and water preheaters arranged within said successive heating zones in accordance with their respective heat requirements, means for passing water from said water preheater, through said boiler and superheater into said gas retort, means for passing oil through the oil preheater and into said still, and means for passing residual oil from said still into the gas retort.

USE ROTATING DRUM FOR TREATING OILS

1,736,618. System of Treating Hydrocarbon Distillates and Apparatus Used in Connection Therewith. Charles Walcott Stratford, San Francisco, Calif. Filed November 26, 1926. Serial No. 150,678. 7 Claims (Cl. 196—45.)

4. The contacting step in a continuous process for treating oil, comprising rapidly circulating the liquid oil in a continuous stream through and around a



hollow cylinder in a closed container, introducing the liquid oil to be treated to the hollow cylinder or vortex of the circulating fluid, withdrawing substantially an equal volume by stripping uniformly the liquid at the peripheral upper surface of the circulating oil and adding a treating liquid to the circulating stream.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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COMPLETE HEAVY TYPE Ideal Rotary Outfit with 12x12 Ideal Ajax Twin Engine, roller bearing all enclosed, and with 14½x7½x18" Ideal Slush Pump, 4,000 feet 5" Drill Pipe with tool joints, No. 5 3-speed Drawworks, Rotary Crown Block, Drill Collars, Kelly, Hughes Rock Bit and all miscellaneous Tools. This outfit on hand near Cody, Wyoming; can be inspected there. Great Northern Tool & Supply Co., Billings, Montana.

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SALES ORGANIZATION or DISTRIBUTOR wanted to handle complete unit of Air or Gas Lift Ejector, Wall Packer and Booster Valves for the Oil Fields. The important feature of the Ejector is that the pressure is placed directly on the fluid load without one pound of pressure on the Oil Sand. Equipment fully patented. H. KROSCOV MFG. CO., 271-75 First Ave., Milwaukee, Wis.

NEW VENICE OIL FIELD
For acreage in Rancho La Ballona between Ohio Oil Co. 3,000-bbl. well flowing barefooted in Venice, and Associated Oil Co.-Vickers' deep test, No. 1 in Baldwin Hills, Inglewood Field, shut in for over two years. Harry Greber, 753 Overland Ave., Culver City, Calif.

HAVE SPENT MANY YEARS in Mexico. Have acquired some valuable information and properties. Would like to meet someone who would be interested in helping me develop unlimited possibilities. 321½ Alamo Plaza, San Antonio, Texas.

OIL AND GAS production for sale; Arkansas, Louisiana; also acreage and royalties in new Zwolle Field. Address G. Lucas, 712 Dalzell St., Shreveport, La.

SMALL KANSAS CORPORATION oil and gas developing company with several complete standard outfits for turnkey drilling either wildcat or proven acreage, including derrick tools and casing. Have several good bottom hole contracts. Needs advance money for payroll, fuel, etc. Can give good return with safety. Also good opportunity for parties with capital to connect with reliable operators having good office and field organization. Write Box E-63, The Oil and Gas Journal, Tulsa, Okla.

WANTED FOR CLIENT, from owner, 500 bbl. or more Texas production with additional drilling locations. Must have 30 day option for examination. D. C. Oliphant, 19 West 44th Street, New York City.

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

BUSINESS OPPORTUNITIES

WANTED ROYALTY in exchange for equity in nine room house. Two car garage, quarters. Value $12,000. Call, office hours 4-3929. Home, 2-2082.

1,206 ACRES FIFTEEN MILES Southwest from New Field, Pettus, Bee County, Texas. We own this in fee. Major companies holding leases around us. Want best deal can get with Drilling Company. Lacks and Knight, San Antonio, Texas.

210 ACRES BEST LOCATION in Brewster County, Texas, according to Texas University Bulletin. Located near major oil company's acreage, where next big oil field will open. Will sell seven-eighths interest at $500 per acre. B. M. E., Box 226, Austin, Minn.

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Chicago Buying Only for Present Needs

Spot Demand for Gasoline Light. Colder Weather Hoped to Cause Demand for Burning Oils. Fuel Oil Prices Unchanged

By J. B. Waldo

CHICAGO, Jan. 6.—There was no great activity in the gasoline situation in this market on Monday. Shipping instructions on contracts were being received generally for a fair amount of material but the spot demand was light. There was nothing to indicate any prompt change in the method of buying for present needs only. Some of the larger refiners were still holding for 7 cents Group 3, for U. S. Motor gasoline but at least one of the largest of the local refiners was accepting business at 6½ cents from regular accounts and others were meeting responsible competition down to that price. In the open market spot gasoline was generally offered at 6¼ cents and some effort was being made to get away from the lower prices which were named last week. Some of the Tulsa buyers reported to their principals that the market seemed pegged at 6 cents for resale for immediate shipment and that several of the refiners who had been selling at that price or for less now stated that they were sold up.

Of the higher gravities the 375 endpoint gasoline was firmly held but the other gravities were easy in tone. The nearby refinery which has been quoting low prices on kerosene and 400 endpoint gasoline has withdrawn the low prices stating that it had closed out all that it desired to sell at these prices which were made on account of inventories.

Holding Fuel Oils

The mild weather continued until today but a cold wave is predicted for tomorrow and this is causing the fuel oil concerns to hold cars of fuel oil which they would otherwise have offered for sale. There are quite heavy accumulations of furnace and industrial fuel oils with the distributors whose tanks are full and many have cars on their sidings. It is expected that a cold spell will have to last for a week to raise a demand for distributors that will amount to anything.

Prices on fuel oils were unchanged on Monday with a continued inquiry for zero gas oils both dark and straw color and for zero 18-20 fuel oil. One large refiner in stating that it had no industrial fuel oil said that it would be glad to run more fuel oil now when it could sell it readily but that it was limited as to its gasoline output and could not increase the output of the latter even to run more fuel oil. This condition may have a bearing on the supply of both products.

Gasoline Consumption Shows Drop

Whatever the cause, gasoline consumption is showing a considerable reduction in this territory. Some of the reports given out of increased consumption by individual organizations are misleading, for their total sales have been added to through the absorption of gallonage that previously went to some other distributor. The individual station sales in a great many instances show material reductions and many operators state that their stations with occasional exceptions are showing the slump that comes with bad weather and which is most noticeable at this season of the year. With only a moderate consumption at the best, the distributors are buying carefully and conservatively.

So far there has been little stocking up on the part of the larger distributors. Several have thought about doing so but they have not placed their orders except in a few instances and in some of these instances the buyers have bought a limited number of cars and now say that they bought too quickly. One of the large jobbing concerns in this state had planned to begin stocking its tanks when it could buy a good U. S. Motor at 6 cents but when the gasoline was offered at that price, refused to place the order believing that it would do better to wait. Probably some of this buying is being done quietly and at prices that are kept under cover.

One operator bought some U. S. Motor gasoline of high quality except that the gravity was just a small fraction under 58 degrees at 5½ cents, and regrets that he did so as he has stated that he could have bought that material at 5¼ cents. While some buyers report that they find it difficult to purchase anything in the shape of U. S. Motor gasoline at less than 6 cents, Group 3, for good Oklahoma material, there are exceptions and the ones who are profiting by it are the large distributors whose business is considered worth having even at very low prices.

Gasoline Stocks Accumulating

The slowing down in the gasoline demand which has resulted from early interruptions to traffic has caused accumulations of gasoline which some refiners are willing to carry. Others are seeking some one who can buy the material at a price and under conditions which meet the needs of the refiners. Last week there was a representative of a number of rather small refineries in this market, trying to dispose of the entire gasoline output of these plants which had an average capacity of 2,000 bbls. daily. He named a price of 7 cents, good for one year. This looks like a fair proposition yet he met with no encouragement. Some buyers have made such deals in the past and find that it is hard to get the gasoline shipped after the price in the open market advances above that named in the contract. There has been some increase in gasoline stocks and this is a potent influence towards an easier tone to the market for immediate movement. However, practically as low prices are being named for deliveries over the month and over February, and this is one of the reasons why the larger trade is not anticipating its wants.

The demand for the higher gravities has been proportionately a little better than for the U. S. Motor grade but there has been little, really active demand. The popularity of the antiknock gasolines and particularly of the Ethyl product is continuing. Refiner after refiner is abandoning his own antiknock gasoline to get a license from the Ethyl Gasoline Corp., so as to be in the swim next season which many believe will be an Ethyl Gasoline period. Practically every city, town and hamlet will have a supply of this gasoline and it will be thoroughly pushed. In fact one of the reasons why refiners are taking out licenses is to share in the benefit to be derived from the general advertising which will be given this motor fuel. Conditions in the eastern part of this territory and in Ohio are still unsettled and prices are irregular.

Kerosene Market Still Easy

The kerosene market continues easy with 4 cents frequently quoted and 4⅛ cents called the high price at which sales are made. Some of the refiners who are holding at higher figures are doing this because they cannot go any lower without disturbing their fuel oil contracts as they have brands of furnace oil for which they are receiving as high as 4½ cents on contracts. Some kerosene is being use, it is reported, from the country, to blend a light furnace oil by mixing with fuel or gas oil. Little, if any, kerosene is being run right now except what is absolutely required.

The demand for furnace oils has been reduced by the spell of mild weather and in some cases, distributors are asking that further deliveries be withheld. Some of the local distributors have even offered to sell various grades of furnace oil but they have wanted the full market price. One of the refining organizations with headquarters in this city has had some overshipments, chifely of distillate which it has been offering at low prices to save demurrage. This refinery turns out a good distillate and it was seeking business at 3½ cents, Group 3, with cars on the tracks or rolling from which it could make deliveries at once, but practically every furnace oil dealer was in the same position as to oversupplies.

Weakness in Distillates Only

So far the only one of the various oils used in oil burners that has displayed weakness has been distillates and there is such a surplus of these and such a scarcity of the high gravity fuel oils that it has been suggested that the plan of blending be carried out on a still larger scale in order to supply the public and the distributors with the lighter fuel oils which are in demand.

Prices are out of line. For example the per gallon cost of an 18-20 fuel oil right now is 2⅛ cents; of a 26-28 fuel oil 2½ cents, and a zero 28-30 fuel oil will bring 3 cents per gallon compared with 3¼ cents for a dark gas oil or 3½ cents for a distillate with a low flash and a gravity of 37-40 degrees. These are the refinery prices for the material named.

The demand for straightrun gas oil is not good and while prices are seemingly pegged to buy at 2½ cents and to sell at 2¾ cents little business is being developed at these figures by either the refiner or the tank car dealer. Purchasing agents are almost as one in stating that they are not interested and they are evidently of the opinion that prices for these gas makers' oil will go lower before there will be any active trading so far as the gas companies are to be considered. Of course a large amount of gas oil is being used right now by the gas companies but it is coming on contracts or being drawn from stocks not bought in the open market. Some have even given instructions that shipments be held back, due doubtless to the smaller demand, owing to mild weather, for much gas is used now in home heating by various methods.

Zero Material in Different Position

The zero material is in quite a different position. Prices are firmly held and no large stocks are known to be available. The present asking price by refiners generally is with seeming unanimity 3⅜ cents, the Group 3 and the car lot price to the consumer is now close to 3½ cents with a possible price of 3⅜ cents to a large buyer. This price is for a dark zero gas oil. The straw article is to all intents unobtainable at present.

The demand for the zero gas oil is waiting for more cold weather. Dealers here report that they have renewed their stocks and are in position to care for their customers for some time without further purchases. Shipments are being held back or material on the way is being diverted. A brisk cold snap lasting for a week or so would bring the dealers back in the market for more oil but right now they are amply supplied. Although the demand is light, the refiners are holding zero gas oil in all gravities firmly and waiting for a renewal of the big demand which under usual conditions should come this month. The large business must be done before the purchases are made for March. After March is closed no matter what the weather man does the oil man knows that spring is near and he will not buy except in small quantities.

The light fuel oils are strongly held. Some refiners are holding their 30-32 at 3¼ cents and their 28-30 zero at 3 cents. These are not top prices by any means although there is a little lull in the demand. Much of the available oil in these grades is a blended fuel oil and it is possible that further supplies will be available from refiners with large stocks on hand of heavy residual oils and of distillates which can be readily blended.

Give Grade Wanted by Blending

Several of the local distributors are able to supply practically any wanted grade simply by blending. Real blending is not mere mixing of two oils in a tank wagon or tank car and assuming that the shaking up which the container will receive before reaching its destination will result in a properly blended oil. Where there is considerable difference in the gravities of the blended oils, it has been found that the safe way is to blend under heat in a tank with proper agitation.

The demand for the industrial fuels is light as many plants are now running on part time or capacity and will until late in this month. There are many fuel oil contracts in force and as the maximum price named in most of them is below the present spot market, buyers are taking their oil as freely as they can use it.

Almost every one of the fuel oil dealers has contracts in force with a 70 cents maximum on an 18-20 fuel oil. Of course the sellers had protected themselves with contracts with refiners but some with refiners who are unable to make good on their coverage. The dealers have had to cover their contracts a second time, and have not always been able to do so to the full extent or at the best price.

Shell and Sinclair Change Things

One of the great changes here has been the retirement from the market as a source of supply for the dealer, of the Shell and the Sinclair refineries. These concerns are now supplying their contract customers only and while not definitely committing themselves state that they will have little fuel to sell in the near future to outside dealers as they each have built up their own distribution and contract business to such an extent that under the present system of refining with crackers, they will have practically no surplus to sell.

The greatest demand, and that which is most difficult to satisfy, is that for the 18-20 fuel oil. It must be a zero oil, yet last week, taking the chances of the mild weather, a fuel oil of this gravity but a 20 to 30 cold test sold at 82½ cents to dealers. It was a question of the buyer taking what he could get.

The lubricating oil departments are busy preparing for the coming season but are finding the immediate business quiet.

The new high fire low wax zero oils are in good inquiry and are giving satisfaction. The makers state that they will show great endurance and stand up under the most exacting tests. It is stated that some of the large companies in this territory will soon be out with a new product supposedly along the same line. Extremely low cold tests are featured in some of these oils.

Tank Wagon Situation Unchanged

There has been no general change in the tank wagon situation and none is expected in the near future. One of the

(Continued on Page 129)

Selling Policy in the East is Revised

Standard Establishes Base Price for Gasoline and Kerosene on Cargo Market at Seaboard. Others Expected to Follow

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Jan. 6.—The outstanding feature of the week, and one of the most important recent development in marketing practices as well, was the announcement of the Standard Oil Co. of New York of a radical revision in its marketing policy. Effective today, the New Jersey company will establish a base price for gasoline and kerosene determined by the cargo market at the seaboard. To the cargo market price, covering gasoline and kerosene in tank steamer quantities, will be added a differential and the actual freight to designated selling points. This replaces the former plan of marketing under a Statewide tank wagon price, which absorbed the average freight costs to all points in the territory covered. The change, which affects all of New Jersey's marketing territory, will mean numerous price revisions, involving reductions ranging from a half to 1½ cents per gallon at various points.

The change, which probably will be followed by the other large marketing companies, is due primarily to the increasingly large receipts of California gasoline, as well as the growing imports of Venezuelan gasolines. Seaboard points of course will derive the maximum advantage from the new pricing policy, owing to the lower freight charges, and consumers near other refinery points will also benefit from this narrowing of the spread between the wholesale and retail markets.

Thus far it is not known whether any change will be made in the method of pricing tank car gasoline, although it is considered probable that some revision may be made to readjust the tank car market to the retail pricing revision.

Maintenance of the present gasoline price schedules in tank car markets is the principal problem confronting Eastern refiners as the new year gets under way, and the market undertone is far from stable. Weakness in gasoline has been compensated for in part by the strong markets ruling on furnace oils and kerosene, however. Cylinder stocks have shown further easiness during the past week, the market being lower on several important grades.

Gasoline consumption has shown a little improvement but receipts of gasoline from California and South America are exerting a strong influence upon the East Coast market position.

While refiners have not yet fully compiled sales data covering 1929, preliminary reports indicate that the year was an exceptionally good one, both from the standpoint of gallonage and operating profits. The general feeling among Eastern refiners and marketers as the trade goes into 1930 appears to be that the industry has now succeeded in re-establishing itself on a firm footing, and that with overproduction of crude taken care of by co-operative curtailment efforts, and marketing abuses largely eliminated through the industry's code of ethics, the outlook for business during the new year is decidedly favorable. Eastern refiners, however, still have a major problem on their hands in the shape of continued heavy receipts of "outside" gasoline.

Tank Car Gasoline

The market for U. S. Motor appears to be slowly slipping, but thus far there has been no revision in the posted schedule, and leading refiners continue to quote 8¾ cents per gallon, tank cars, at New York and New Jersey refineries. Some sellers, however, are reported going under this level, with 8½ to 8⅝ cents mentioned as the general going quotation in these transactions.

There has been a little pick-up in demand during the week, and some interests appear to feel that the 8¾-cent basis can be maintained in the event that the East experiences a good "break" with respect to weather conditions during January. Favorable weather at the year-end brought out an improved demand throughout the area.

California U. S. Motor gasoline is reported offered out this week at 8 cents per gallon laid down in New York. Only one cargo is reported available at this figure, but it is obvious that if additional California supplies were to become available at this level, East Coast refiners would have a difficult time maintaining an 8¾-cent market and maintenance of even an 8½-cent basis likewise would appear unfeasible.

Little has been heard regarding offerings of gasoline out of the Gulf for shipment to domestic Atlantic ports, but it is expected here that some low-priced motor fuel will be available at the Gulf shortly in the event that the export market continues as dull as has been the case during the past week.

Price shading in the tank car market is by no means confined to the New York area, Boston, Philadelphia and Baltimore likewise being reported affected by the keen competition for business.

Refiners report that the market for premium grades of motor fuel has not been affected by the price cutting prevalent on the U. S. Motor grade, and sales of the former quality are showing steady improvement as the winter season progresses.

East Coast refiners will soon have their sales figures for 1929 in shape, and it is intimated that the total of gallonage on the part of the principal interests will show a substantial increase over 1928, notwithstanding the sharply increased competition experienced in most sections of the East during the year just ended.

Tank Wagon Gasoline

The change in marketing methods instituted by Standard Oil Co. of New Jersey has of course overshadowed all other factors in this week's tank wagon market, and the trade is awaiting announcements of similar revisions on the part of other marketers.

Consumption has shown some increase throughout the Eastern territory during the past week, due largely to the more favorable weather conditions. Independent jobbers have disturbed the position of the market to some extent by price cutting, weak refinery markets having given jobbers a wider margin to work on in their competitive operations with leading marketers. This situation has led to a recurrence of "meeting competition" in some markets, a phrase which refiners and marketers had believed definitely eliminated from their marketing vocabulary with the promulgation of the code of ethics. The change in pricing tank wagon deliveries inaugurated by the New Jersey company, if followed by other leaders in the East, is expected to correct this situation, however. Progress is being made also in getting additional ratifications and acceptances of the code of ethics, and the industry in the East believes that competitive marketing conditions will show steady improvement during 1930. There are still a few points in the code which require additional interpretation, and these will be clarified at a meeting here of the A.P.I. committee within the next few days.

Premium motors fuels are still in the ascendancy and some marketers report that their gallonage in the metropolitan territory is running 50 per cent or better on the premium fuels.

Kerosene

The market is well sold up on water white in this area, and the tank car quotation is firm at 7¾ cents per gallon at local refinery terminals. Jobbers have been in the market for supplies in a large way during the week, and tank car movement has been fairly heavy, considering the season of the year.

Sales of kerosene have been greatly stimulated this season by the growing use of company-owned filling stations for the distribution of that product. Most of the large companies are operating larger chains of retail stations than ever before, and in most sections of the territory have found that the addition of kerosene to the stocks of these stations during the winter months has been instrumental in holding up sales totals and keeping the stations on a paying basis during the off-season for gasoline.

The principal development in the tank wagon market is the change in pricing announced by Standard of New Jersey. This revision will mean a maximum reduction of 1 cent per gallon in New Jersey territory, and the trade is awaiting similar action by other large marketers.

Moderately heavy export movement of bulk and cased kerosene from East Coast refineries continues a factor in the present firmness, preventing any accumulation of stocks at principal refining points. East Coast refiners this year have succeeded in nicely balancing their production of kerosene with sales, and have been successful in holding their markets against invasion from outside producing territories.

Gas Oil

The market continues to show a considerable range, with 28 plus recycled oil ranging from 4¾ to 5¼ cents per gallon in tank cars at refineries. The 5¼-cent level, while the posted price, is more or less nominal, the bulk of the business going through at 4¾ to 5⅛ cents per gallon.

Consumption has been well maintained during the week, and refiners report that gas oil production is moving readily into consuming channels with no appreciable accumulation of surplus stocks at the refineries.

Diesel Oil

California Diesel oil is arriving in the East in increasing quantities, but thus far the market has shown an ability to absorb these arrivals without disturbing the price basis, and it is expected that East Coast refiners will be able to at least hold the present price throughout the new year.

Marine companies have contracted for Diesel oil for 1930 in larger quantities than ever before, and the outlook favors a record volume of spot business as well. Considerable important new Diesel tonnage is scheduled to come into service at New York and other East Coast ports during 1930, and refiners look forward to a steadily growing market for this fuel. At the present price of $2 per barrel, Diesel oil is believed to be a much more profitable product than bunker "C," and the growing trend toward Diesel construction is therefore a most favorable development from the standpoint of the refining trade in the East. Venezuela and California are expected to be rather strong competitors in the East this year.

Fuel Oil

Bunkering movement has been heavy during the week, and the new year is getting under way with a rush. Refiners are still quoting bunker "C" firm at $1.05 per barrel, in bulk, f.o.b. refinery terminals, with the bulk of the movement against term contracts. Industrial business has eased off somewhat during the week owing to the usual slackening of manufacturing operations incidental to year-end inventory and repair work.

Refiners are more optimistic concerning the outlook for the bunker oil market during 1930, but opinion is still divided regarding the price which may be looked for. Many interests seem to feel that an advance will be in order later on in the year, when the market benefits to the full from domestic curtailment of crude output. Others, however, seem to feel that the growing receipts of Venezuelan fuel oil will act as an effective curb on any price mark-up, and appear to look for a steady market around the $1.05 level throughout the entire year. The possibility of a continued decline in Mexican production and shipments, however, may upset the latter theory.

Furnace Oil

Domestic heating oil is still very much in the limelight in East Coast territory. The market for the lighter oils is exceptionally strong, and there is a good jobbing demand reported. Refiners marketing this oil direct to consumers are holding firm at recently advanced price levels.

Lower grades of furnace oil, while unchanged in price, are showing pronounced firmness in sympathy with the higher market for the lighter oils. An increasing percentage of heavy oil sales is reported this season, a number of the newer types of home oil burning equipment being designed especially for the heavier oils. While contract deliveries are accounting for the great bulk of the current movement into consumption, spot sales are by no means a negligible factor, and it is evident that many consumers did not place contracts covering their full season's requirements for the current winter months. Marketers are not yet contracting ahead for the 1930-31 season, but it is expected that the selling campaign will get under way during the closing weeks of the current season.

Lubs

Further weakness developed in cylinder stocks during the past week, and prices were lower on a number of grades. Spot 600 steam refined was offered at 31 cents per gallon, a 1-cent decline, and similar reductions were reported on 635 steam refined at 33 cents, 650 steam refined at 37 cents, 600 Pennsylvania, flash at 40 cents, and 630 Pennsylvania flash at 44 cents. Warren and Oil City "E" were unchanged in price, with buyers endeavoring to secure concessions. No further changes developed in prices for bright stocks, but the market tone was soft, with the probability that current prices could be shaded on a firm bid.

Demand for cylinder oils was unusually light during the week. Domestic buyers were practically out of the market owing to inventory time, and export buyers were operating on a curtailed basis in anticipation of more attractive prices in the near future.

While inquiry for red and pale oils fell off during the week, prices appeared fairly steady, and no changes in quotations developed. Refiners report a good amount of contract business for industrial lubs for the first quarter of 1930. Demand from the cotton spinning industry for spindle and other oils has fallen off, however. Most cotton mills are on a short-time basis owing to the current

(Continued on Page 129)

Of Interest to Sales Departments

Motor Fuel Demand First 10 Months Gains 14 Per Cent

Gasoline consumption in 40 states for the month of October, 1929, as indicated by reports made by wholesalers and dealers in the various states, under provisions of the gasoline tax laws or gasoline inspection laws, totaled 867,567,000 gallons, compared with 778,053,000 gallons in October, 1928, an increase of 89,514,000 gallons, or 11.50 per cent. Daily average consumption for October, 1929, was 27,986,000 gallons, compared with a daily average of 29,284,000 gallons in September, 1929, a decrease in daily average during October of 4.43 per cent.

Gasoline consumption in these 40 states, for the 10 months ending with October, 1929, amounted to 8,008,206,000 gallons, compared with 7,030,556,000 gallons for the corresponding period of 1928, an increase of 977,650,000 gallons, or 14.28 per cent.

Consumption during September and October for the State of Massachusetts is also shown.

The figures giving the quantity of gasoline sold or offered for sale, as reported under various laws follow: In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which, if paid, is subsequently refunded. All figures, which are subject to revision, were compiled by the American Petroleum Institute.

GASOLINE CONSUMPTION BY STATES, OCTOBER, 1929

	October	
	1929 (gals.)	1928 (gals.)
Alabama	16,108,000	14,964,000
Arizona	5,853,000	4,580,000
Arkansas	13,417,000	11,493,000
Colorado	14,392,000	12,460,000
Delaware	3,201,000	2,623,000
Florida	17,000,000	17,388,000
Georgia	19,399,000	19,166,000
Idaho	5,903,000	5,084,000
Indiana	40,167,000	35,432,000
Iowa	33,684,000	28,999,000
Kansas	30,125,000	26,616,000
Kentucky	14,867,000	13,110,000
Louisiana	17,016,000	15,349,000
Maine	10,196,000	8,773,000
Michigan	72,128,000	64,695,000
Minnesota	37,023,000	32,266,000
Mississippi	*12,081,000	11,953,000
Missouri	37,348,000	32,719,000
Nebraska	19,699,000	18,029,000
Nevada	1,656,000	1,199,000
New Hampshire	5,894,000	5,027,000
New Jersey	44,329,000	38,805,000
New Mexico	4,363,000	3,436,000
North Carolina	25,242,000	23,230,000
North Dakota	12,830,000	14,041,000
Ohio	87,624,000	79,371,000
Oklahoma	28,620,000	25,438,000
Oregon	15,061,000	13,265,000
Rhode Island	6,452,000	5,866,000
South Carolina	10,291,000	8,965,000
South Dakota	11,739,000	11,033,000
Tennessee	18,161,000	16,092,000
Texas	68,663,000	62,380,000
Utah	5,332,000	4,241,000
Vermont	4,592,000	4,353,000
Virginia	19,523,000	17,324,000
Washington	22,998,000	20,280,000
West Virginia	12,599,000	11,273,000
Wisconsin	39,130,000	33,927,000
Wyoming	3,261,000	2,808,000
Total	867,567,000	778,053,000
Daily average	27,986,000	25,098,000
Increase over previous year:		
Amount of increase	89,514,000	.....
Percentage increase in daily average	11.50%	.....
Massachusetts	46,719,000	.....

*Estimated.

NORTH DAKOTA CONVENTION

The annual convention of the North Dakota division of the Northwest Petroleum Association will be held at Grand Forks, N. Dak., January 30 and 31, according to an announcement by Paul Hadlick, secretary of the association. Speakers for the two-day meeting will be announced later. The annual banquet will be held at the Dacotah Hotel the evening of January 30.

HUMBLE HAS SERVICE STATION PROGRAM UNDER WAY IN TEXAS

HOUSTON, Tex., Jan. 4.—Humble Oil & Refining Co. has carried out a service station and bulk station building and expansion program the past year which has involved the expenditure of over $2,000,000 and which has developed a type of stations embodying beauty, permanence and utility not before realized on so large a scale by any one company. Between 180 and 200 stations of the new type have been built in Texas during the year by Humble, which has meant an increase in volume of business of 50 per cent, and as the program has not been completed the coming year will witness the building of scores of additional stations of the same type by this company.

Built with a view toward attractiveness, the new Humble stations have done much to remove that neighborhood prejudice against "filling stations." Now, instead of its stations being dirty, greasy eyesores depreciating adjoining property as most stations in the past have done, Humble is building a type of station which will be a welcome addition to any location, assuring a work of beauty, neatness and cleanliness.

Many Features Standardized

Although variable in some details to suit peculiarities of location sites, Humble's new stations are standardized in general style, construction, general layout and service facilities. In type, all are Moorish, the design of the station building proper the same, as shown in accompanying views, and naturally the color scheme of all is identical.

All the stations are roofed with copper, presenting a very distinctive feature. The exterior is of stucco finish in special color with the base and columns of blue tile, and the eave lines of ornamental tile. The interior is of exposed glazed brick and the floor of hardened concrete, all making for ease in keeping clean and sanitary. The company's responsibility to the neighborhoods, however, does not end with a beautiful building but extends also to the premises, each station site being set off with a standardized fence of simple yet neat and attractive type. Uncemented patches are grassed and suitable shrubbery and flowers are set out according to landscaping requirements.

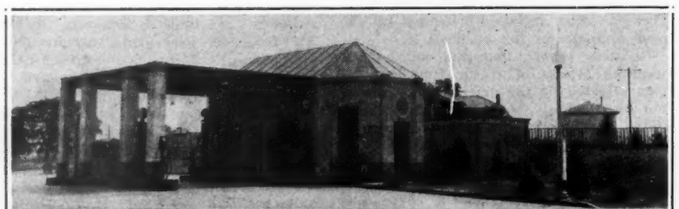
Each service station is costing more than ordinarily is spent in such an institution but as each is an attractive asset to any locality and is being built of a permanent nature so it will be virtually as good in 10 or 20 years from now as it is today, Humble is feeling well repaid in its efforts to provide a station of this type.

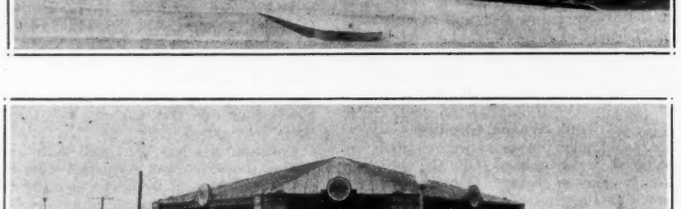
"One-Stop" Type

These stations also are unique for large company owned stations as each is of the "one-stop" type, that is, each station provides a general service including not only the sale of gasolines and oils, but washing, greasing, tire repairs, new tires, battery service, accessories and such other incidentals as make for the convenience of the motorists. All Humble stations now are being equipped for this complete service.

Special wash rack and grease rack facilities which permit operators to keep the premises clean of waste oil and dirt at all times have been installed at all these stations. These include a unique drainage arrangement whereby all refuse can be washed into a common settling pit, from which the water can be drawn off into sewer connection, and the collected mud, old oil and grease cleaned out and destroyed without the ordinary objectionable features existing at many stations.

The same general features of the service station as pertaining to style, construction and efficiency of operation also are being applied in the many new bulk stations. All the latest bulk stations are being built of the same materials as service stations permitting the same degree of neatness and cleanliness, in addition to providing efficiency and utility.





Types of service stations erected in Texas by the Humble Oil & Refining Co. Upper view shows station at Houston and the lower view a new station at Corpus Christi.

NEW YORK CONSUMPTION

Approximately 10 per cent of the gasoline demand in United States comes from New York State, according to gasoline tax reports for a six months' period ending November 1. This covers the first six months of the gasoline tax in New York State. During that period there was a total of 788,900,547 gallons of gasoline reported, of which 774,701,746 gallons were subject to the State tax of 2 cents.

Based on this six months' report, the gasoline consumption in New York State in 1929 was more than 1,500,000,000 gallons which was approximately 10 per cent of the total for the entire United States. The New York consumption exceeds that of any other state.

STUDENTS INVESTIGATE MERCHANDIZING METHODS

Thirty per cent of the consumers who stopped dealing with retail service stations did so because of inefficient salesmanship and the remainder due to poor service at stations, according to a survey conducted by students at the University of Oregon. Actual reasons given by customers who patronized 1,483 retail outlets were obtained.

In the following table these reasons as classified under 10 heads are given:

Due to Inefficient Salesmanship		
1. Indifference of salespeople	9%	
2. Ignorance and misrepresentation of goods	8%	
3. Discourtesy of salespeople	7%	
4. Overinsistence of salespeople	6%	
		30%
Due to Poor Service		
5. Errors and delay in service	17%	
6. Unwillingness to make adjustments and tricky methods	10%	
7. Attempted substitution	6%	
		33%
8. High prices	14%	
9. Slipshod methods	13%	
10. Poor quality of goods	10%	
		37%
Grand total		100%

CANCEL TRADEMARK

NEW YORK, Jan. 6.—W. M. Kinnan, first assistant commissioner of patents, has ordered the cancellation of the trademark "Castorlube" registered by the Castorlube Refining Co. of lubricating oil. The cancellation was on application by the Franklin Refining Co.

Franklin Refining Co. established the fact that it had used the trademark at an earlier date than that claimed by the Castorlube Co. The latter company, in its defense, contended that the Franklin Refining Co. used the word only to indicate that the product contained castor oil, and therefore was not injured by the registration, but this point was overruled.

ADD TWO AIRPLANES

NEW YORK, Jan. 4.—The Texas Company has added a Great Lakes biplane and a Waco biplane, to be known respectively as "Texaco 6" and "Texaco 7," to its fleet. The former will be used in the Seattle and Los Angeles sales districts, while the latter is for use in the southern territory.

An unusual feature of the "6" are the so-called "doughnut wheels," used in place of the regular landing wheels, facilitating landings and takeoffs and enabling the ship to rise from sand, snow, swamp or rough ground in the event of forced landings.

JOINS STEVENS COMPANY

F. L. Miller, for several years vice president and treasurer of the Miller Petroleum Co., has joined the A. J. Stevens Grease & Oil Co. as sales manager. Mr. Miller has been engaged in the oil business since 1904. The greater part of that time he has been in the marketing end of the business. He is widely known in Mid-Continent refining and marketing circles.

Natural Gasoline Manufacture

Several Sources of Evaporation Losses In Plant Operation

By R. A. Boyd
Columbian Gasoline Corp.

In the manufacture of natural gasoline, especially with the old inefficient plants, which recycle tail gases through one or more stages of compression or blow tail gases to the air weathering losses run very high. With the proper hook-up a large part of this gasoline can be recovered. However, there is a rather high percentage of good gasoline which leaves the vent tanks and the relief valves on the run-down tanks of the compressors even when pressures of 250 to 300 pounds are carried to the final stage of compression. This loss can only be determined by very careful analysis by competent chemists.

In plants that recompress the vapors from the storage tank, run-down tanks, and recover the vapors from cars while being loaded it is very hard to determine accurately just what the evaporation losses are. However, some producers agree that not more than 2 per cent of the gasoline is lost through evaporation and weathering from the time it is extracted until it is loaded out in tank cars. This figure of course may be higher or lower depending on whether the plant is loaded to capacity or very much underloaded. The percentage is higher on a plant underloaded due to the length of time it takes a certain amount of gasoline to pass through the system, in which case the recompressors have a longer time to pull on it before it finally goes to storage.

The recompressors used in the old type of plants had a tendency to stabilize the gasoline just as the rectifying column does in the newer plants of today, but the stabilizing of the gasoline with a compressor is very inefficient as it is more of a weathering process accomplished at high pressure, and the undesirable propane in leaving the gasoline even at the high pressures which are carried takes part of the higher ends with it. Therefore, it is not so desirable to extract all of the gasoline from the gas, for if with the old-time plants all of the gasoline were extracted more propane and the light constituents would be absorbed and in weathering them off, in the system it is possible that a greater evaporation or weathering loss would be encountered.

With the old plants it was the producer's idea to make and ship just as wild a gasoline as they could sell, for they found that to raise or lower the recovery one cc. cost or made them about 2 per cent on production. Also experience taught them that for a rough approximation a weathering loss ratio of 4 per cent per degree A.P.I. loss (or gain) could be expected.

Losses From Leaks

Another source of loss which is charged to evaporation losses are leaky stuffing boxes on the compressors, leaks around valve stems and at connections around the rundown and storage tanks. It takes a very small leak to lose considerable gasoline as one gallon of gasoline if vaporized will only make from 27 to 30 feet of gas depending on the quality and the constituents of which the gasoline is composed.

Very often a plant using recompressors shows a very high evaporation or weathering loss when in reality there is very little loss, due to the fact that considerable gasoline vapor is pulled from the storage tanks, especially in hot weather and recondensed and naturally regauged at the rundown tanks before it is put back in the storage tanks, in which case it is reported as production.

PRORATION BRINGS SUBSTANTIAL DECREASE IN NOVEMBER OUTPUT

Natural gasoline production in the United States for the first time in several months showed a substantial decrease in November according to the latest report of the Bureau of Mines. The decrease is largely due to the smaller production in Oklahoma and California, a development of the curtailment programs adopted in those states which has brought a decrease in the quantity of casinghead gas available from producing wells.

The Oklahoma output dropped from 59,400,000 gallons in October to 55,600,000 gallons in November. Most of this decrease came from the plants in Greater Seminole and adjoining areas. A 20 per cent curtailment program was in effect in most of the fields of that area and 40 per cent in one pool and this was responsible for the smaller production. The November, 1929, production was practically the same as in November, 1928.

Largely the same situation obtained in the newer areas of California where the well production has been curtailed to keep the supply of crude oil in line with the demand. The output of Long Beach and Santa Fe Springs Fields which have showed a consistent increase the first 10 months of the year showed declines in November amounting to almost 25 per cent.

There were no important changes in the remaining states. The average daily production in November was slightly less than in October with a small increase in the Texas Panhandle. The latter area has shown a large increase in recent months. A curtailment program has been adopted for Gray County, the principal producing area and that action no doubt will result in a smaller production starting the first of this year.

Stocks of natural gasoline increased approximately 1,000,000 gallons in November. Most of this increase was in Oklahoma and the Appalachian states.

The accompanying table summarizes the report for November.

NATURAL GASOLINE, NOVEMBER, 1929
(Thousands of gallons)

	Natural gasoline						Blended motor fuel Nov., 1929		
	Production				Stocks end of month		Natural gasoline used	Naphtha or other oils used	Stocks end of month
	Nov., 1929	Oct., 1929	Nov., 1928	Jan.-Nov., 1929	Nov., 1929	Oct., 1929			
Appalachian	9,400	8,900	9,200	91,300	2,603	2,314	84	107	231
Ill., Ky., etc.	1,300	1,300	1,200	12,400	255	269	....	....	7
Oklahoma	55,600	59,400	55,400	622,000	7,509	6,802	1,163	1,168	287
Seminole, etc.	27,400	30,400	25,100	319,700	2,504	2,220	387	589	116
Osage County	7,800	7,600	7,600	77,200	1,041	538	3	3	4
Rest of State	20,400	21,400	22,700	225,100	3,964	4,044	773	576	167
Kansas	3,100	2,800	3,200	30,900	658	588	33	2	7
Texas	40,900	40,700	30,400	382,300	6,837	7,327	411	851	154
Panhandle	20,800	19,300	12,100	163,700	3,317	3,901	299	654	72
North Texas	4,200	3,900	4,000	44,200	949	969	23	26	33
West Central	12,600	13,800	13,000	139,000	2,153	2,135	67	139	46
Rest of State	3,300	3,700	1,300	35,400	418	322	22	32	3
Louisiana	6,100	6,300	4,800	57,100	918	704	13	17	8
Arkansas	2,700	2,900	2,600	29,700	329	270	238	313	15
Rocky Mountain	3,900	4,400	3,900	43,400	628	594	....	....	....
California	66,200	79,600	47,600	739,100	1,846	1,721	....	....	....
Long Beach	15,800	20,100	17,200	212,700	....	....	....	....	....
Ventura Avenue	6,300	7,100	5,300	71,200	....	....	....	....	....
Seal Beach	3,300	4,300	2,400	38,000	....	....	....	....	....
Huntington Beach	3,600	3,700	3,900	38,200	....	....	....	....	....
Santa Fe Springs	18,300	26,200	3,900	203,100	....	....	....	....	....
Rest of State	18,900	18,200	14,900	175,900	....	....	....	....	....
Total (gals.)	189,200	206,300	158,300	2,008,200	21,583	20,589	1,942	2,458	709
Daily average	6,310	6,650	5,300	6,013	....	....	....	....	....
Total (bbls.)	4,504	4,912	3,800	47,814	514	490	46	59	17
Daily average	150	158	127	143	....	....	....	....	....

A PRACTICAL SUGGESTION

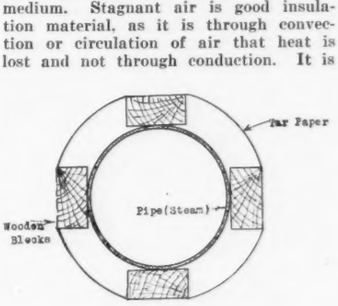
STEAM PIPE INSULATION

It is rapidly being realized that the cost of generating steam even with free fuel and soft boiler feed water, is an item that must be given considerable attention in the economical operation of a gasoline plant. The advantages of using dry steam and the prevention of water condensing in steam lines is also gradually being recognized.

Heat is dissipated by connection, conduction and radiation and this suggestion deals with a simple cheap and quick method of covering steam lines and is applicable chiefly on temporary steam lines or at small plants where a large investment in permanent covering is not justified.

The method consists in placing three or four wooden blocks three-quarters of an inch square and about 4 inches long around the steam pipe. The blocks are held in place by wire and spaced about 18 inches apart along the pipe. Next, tar paper is wrapped around pipe and over the blocks. It is held by wire wrapped around paper at each ring of blocks, making thus two supports for each strip of tar paper which is usually 36 inches in width. Tar paper that has been impregnated with a gilsonite asphalt should be used if possible.

The paper covering sheds the rain and snow from the line and the dead air space provides an excellent insulation medium. Stagnant air is good insulation material, as it is through convection or circulation of air that heat is lost and not through conduction. It is therefore seen that this simple and easily fabricated insulation prevents the air from circulation and approaches stagnation of air, thus affording a method of decreasing water condensation in the steam lines.



Steam pipe insulation.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

Agree on Research Program Covering All Aviation Fuel

An exhaustive investigation of motor fuels for airplanes in which field tests and laboratory investigations will be correlated was agreed upon at a meeting of the Research and Educational Committee of the Natural Gasoline Association of America held in Bartlesville, Okla., last week. The work will be carried on under the supervision of Dr. G. G. Brown of the University of Michigan, who has headed the association's research work for several years.

The committee has had the program under consideration for some time and it was decided that the association's research work for the coming year should be centered on this problem which is of interest not only to natural gasoline manufacturers but all refiners of motor fuels. A plan has been worked out in which results obtained with various grades of motor fuels in actual flying tests will be checked with laboratory tests in which accurate information will be obtained covering the hydrocarbon constituency of the fuels.

Four companies have already agreed to co-operate in the field tests and others have indicated their intention to make their airplanes available for this phase of the investigation. The Phillips Petroleum Co., Skelly Oil Co., Shell Petroleum Corp. and the Empire Oil & Refining Co. are all equipping planes for the field tests. In order to obtain the required data it will be necessary to install a number of instruments which will check all phases of the operation. The manufacturers are particularly interested in checking the operation from the standpoint of vapor lock. An elaborate system of investigating this problem has been worked out by the committee.

Results of field tests will be reported with forms especially prepared for that purpose. Samples of the gasoline used will then be sent to Doctor Brown who will make complete laboratory investigations of the fuels. This will include the hydrocarbon content of the samples. With both field and laboratory tests, Doctor Brown with the aid of the committee hopes to obtain information with which it will be possible to determine the specifications of motor fuels which will give the best operating results in aviation service.

The tests will extend over a period of at least several months. It is necessary to obtain information under wide variations in temperatures and altitudes and numerous tests will be necessary.

G. G. Oberfell of the Phillips Petroleum Co. is chairman of the committee. Other members are E. L. Peck, Empire Oil & Refining Co.; W. Baker, Sinclair Oil & Gas Co.; E. R. Filley, The Texas Company; Emby Kaye, Skelly Oil Co.; W. A. Melton, Shaffer Oil & Refining Co.; S. S. Smith, Shell Petroleum Corp.; A. F. Wood, Hanlon & Buchanan, Inc.; C. W. Anderson, Chestnut & Smith Corp., and W. W. Robinson, Jr., The Texas Company of California.

Brief Items for Petroleum Refiners

SINCLAIR SHUTS DOWN PLANT AT MERAUX, LA.

The refinery of the Sinclair Refining Co. of Louisiana at Meraux, La., has been shut down. The refinery which was a combination topping and asphalt plant has been operated for several years with a rated capacity of 30,000 bbls. daily.

It is understood that the shutdown is permanent and that the refinery of the Sinclair Refining Co., near Houston, Tex., will be enlarged to take care of the demand for products previously supplied from the Meraux refinery. The Sinclair company has been making numerous improvements at its refineries during the past year and the consolidation of the Houston and Meraux plants was one phase of this improvement program.

According to information from Houston, the company's gasoline storage plant at Westwego, La., has also been closed down. The gasoline storage facilities at the Houston refinery are being enlarged.

SIGNERS OF CODE NOW TOTAL MORE THAN 9,000

NEW YORK, Jan. 4.—More than 9,000 refiners and marketers signed the National Code of Practices for Marketing Refined Petroleum Products before 1929 closed, it was revealed today by the American Petroleum Institute. The code was approved by the Federal Trade Commission in July.

Speaking of this record today, W. R. Boyd, Jr., executive vice president of the Institute, said:

"More than 9,000 refiners and marketers have signed the National Code of Practices for Marketing Refined Petroleum Products since it was authorized by the Federal Trade Commission on July 25, 1929. Such wholesale approval should dispel any doubt as to the need of a code and provide ample proof that the code as drawn is meeting the test and is serving its useful purpose.

"The code isn't perfect as yet, nor is it 100 per cent effective. But it is only five months old, and it may be said that any five-month youngster with 9,000 backers certainly shows promise. We are still working on it, polishing the rough spots and strengthening the weak, and striving so to shape its final form that it will meet every marketing condition and remedy every marketing ill. This takes time and requires patience.

"The code was written for the good of the trade and of the consuming public. Benefit should be mutual. Elimination of unsound business practices and unethical competitive methods will do much to help the seller. Assurance of improved service, quality of products, reasonable prices and fair treatment should be welcomed by the consumer.

"Nineteen thirty should be more than just a new year to the marketing branch of the petroleum industry and to its best friend, the public. It should mark the dawn of a new era of confidence, fair treatment on both sides, good will and good business. These are true benefits of a real code of ethics."

BUILDING ASPHALT PLANT

The Mexican Petroleum Corp., a subsidiary of the Pan American Petroleum & Export Co., is building an asphalt plant near Savannah, Ga. The plant which will be completed by early summer will have a capacity of 5,000 bbls. daily.

The plant will be located on the Savannah River. The river has been dredged to permit tanker movement to the plant. The Mexican Petroleum Corp. is now operating refineries at Destrehan, La., and Baltimore, Md.

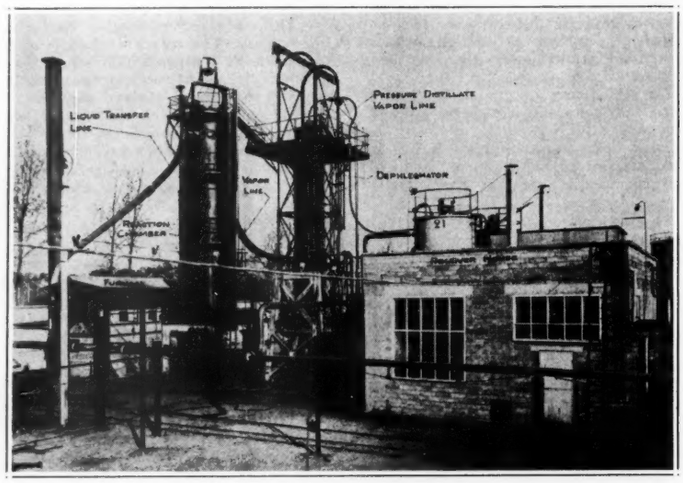
OBTAIN SATISFACTORY RESULTS IN OPERATING SMALL CRACKING UNIT

Possibilities that a very small-sized cracking unit may be profitably adapted to use in a refinery where the quantity of cracking stock produced is small are indicated by the operations of a Dubbs cracking unit with a rated charging capacity of 300 bbls. a day which was recently completed in Belgium.

Cracking has usually been considered as a large-scale operation. Refiners with very small plants have hesitated to install cracking equipment because the practicability and economy of such operation had never been demonstrated, according to Paul Truesdell of the Universal Oil Products Co.

Now this demonstration is being made. The plant has been in operation only about two months. The unit was designed to crack tar from low temperature carbonization of coal to make gasoline. However, it was found that the tar would not be available for several months. The plant then showed its versatility by operating successfully on fuel oil from Rumanian crude, on which stock

(Continued on Page 129)



Small cracking unit in Belgium.

MICHIGAN REFINERS HAVE SMALL CRUDE OIL SUPPLY

MUSKEGON, Mich., Jan. 4.—The crude oil production of Michigan has dropped to below 15,000 bbls. daily at the start of the new year, reducing the supply available for refiners in the State and outside buyers. The production is now about evenly divided between the Moun Pleasant and Muskegon Fields.

Practically all of the Mount Pleasant Field is being run by the Pure Oil Co. which is shipping the crude to the refinery of the Imperial Oil, Ltd., at Sarnia, Ontario. In the Muskegon area, the Dixie Pipe Line Co. is running about 2,800 bbls. daily of the Dundee sand crude oil and 400 bbls. daily of the Traverse sand. The latter crude oil is being shipped by tank car to the Standard Oil Co. of Indiana refinery at Zilwaukee, Mich. The Dundee sand is now being stored or shipped by rail to the Standard refinery at Whiting, Ind.

The remaining crude oil, amounting to approximately 4,000 bbls. daily, is being purchased by the Old Dutch Refining Co., Michigan Central Refining Co. and the Henry H. Cross Co., all of which built refineries near Muskegon during the past year.

TO OPERATE REFINERY

The small plant at Newcastle, Wyo., formerly operated under the name of the A. A. Carter Refining Co. will resume operations next month. B. V. Hole is the present owner of the plant which is being reconditioned for operation. The plant will manufacture lubricating oil. Mr. Hole will be in charge of operations.

WOODWORTH SELECTED BURFORD TREASURER

James E. Woodworth has been elected treasurer of the Burford Oil Co. of Pecos, Tex., according to an announcement of the past week. Mr. Woodworth has been associated with the Marland companies at Ponca City, Okla., for more than nine years, serving in various capacities. He joined the Marland Refining Co. in September, 1919, being employed as statistician and assigned to the accounting department. Prior to his association with the Marland Refining Co., he served the United States Department of Agriculture as field statistician for approximately nine years, with assignments in the States of Oklahoma and Colorado.

Soon after joining the Marland Refining Co., he participated in a general study of the petroleum industry, and was later named as assistant treasurer of Marland Refining Co. In 1920, upon the acquisition of properties in Mexico by the Marland companies, Mr. Woodworth served as assistant secretary-treasurer and later as treasurer of the Marland Mexican subsidiaries.

BUYS AMERICAN PLANT

LOS ANGELES, Calif., Jan. 4.—The refinery of the American Refining Co., located at Hynes, Calif., has been taken over by the U. S. Refining Co. of this city. The American plant was formerly operated under the name of the Brown Process Co. It has a capacity of 4,000 bbls. daily. The U. S. Refining Co. has been operating a plant at Torrance, Calif., for some time.

REFINING COMPANIES IN PENNSYLVANIA MERGE

A merger of the Pennsylvania Refining Co., operating a refinery at Karns City, Pa., and the American Oil Works with a refinery at Titusville, Pa., has been completed, according to an official announcement. The merged companies will be operated under the name of the Pennsylvania Refining Co. with headquarters at Butler, Pa.

The two companies have been closely affilliated in their management for some time. John A. Beck, who is well known among Pennsylvania refiners, was president of both companies and will continue as president of the new company. Wayne K. Glenn, formerly vice president of both companies, will continue as vice president under the reorganization. A. B. Weingard, formerly secretary and treasurer of the American Oil Works, has also been elected a vice president. Paul R. Beck will continue as secretary and treasurer and Walter W. Beck has been appointed general manager of refinery operations. Mr. Glenn will be in charge of tank car sales and Mr. Weingard in charge of bulk and service stations.

The properties of the two companies are valued at approximately $4,000,000. The plant at Titusville has a capacity of 1,200 bbls. daily and the Karns City plant 2,000 bbls. daily. Both plants manufacture a complete line of lubricating oils from Pennsylvania grade crude oil.

ATLANTIC BUYS CRUDE

The Atlantic Refining Co. has contracted to purchase the production of the Texas State Oil Co. and the Cranfill Brothers Oil Co. in the Hendricks Pool of West Texas over a period of six months. The oil will be delivered by Atlantic Pipe Line Co. to the Gulf Coast. The production at present totals 1,300 bbls. daily.

BUYS SUPER-STATIONS

NEW YORK, N. Y., Jan. 6.—Richfield Oil Corp. of New York today acquired the business of the Super-Service Stations with headquarters at Lockport, N. Y., operating 25 service stations and servicing 150 stations with an annual volume of 6,000,000 gallons of gasoline. The deal also involves acquisition of three bulk plants. The reported price was $750,000. Floyd A. Root and Fred M. Remick, from whom Super-Stations were acquired, will manage the business for Richfield.

FIRE MARSHALS TO MEET

The annual meeting of the Fire and Safety Marshals of the National Petroleum Association will be held at the William Penn Hotel, Pittsburgh, on January 24. The program is in charge of R. A. Wotowitch, trustee in charge, and James H. Herbery, president of the Fire and Safety Marshals. E. M. Lyons, president of the association, and Fayetee B. Dow, general counsel, will attend the meeting.

OHIO STANDARD EXPANSION

The Standard Oil Co. of Ohio has new still equipment under construction at its Cleveland, Ohio, and Latonia, Ky., refineries. Two 6,000-bbl. vacuum pipe stills of the latest design are being installed at the Cleveland refinery. At Latonia a 4,000-bbl. pipe still and a 2,500-bbl. cracking unit of the Tube and Tank type are being installed. The latter plant is operated under the name of the Latonia Refining Co.

THERMAL PROPERTIES OF PETROLEUM OILS

(Continued from Page 121)

tween .72 and .96 specific gravity and between the temperatures of 32 and 750° F. while the results are estimated to be accurate within 10 per cent. The specific heat expressed in B.t.u./lb. °F. is

$$= \frac{1}{\sqrt{d}} (.388 + .00045t)$$

In B.t.u./gal. °F. the formula becomes

$$= \sqrt{d} (3.235 + .00375d)$$

Latent Heat of Vaporization

The following formula for the latent heat of vaporization expressed as B.t.u. per pound of liquid has been found practical for use on oils between .64 and .91 specific gravity and between temperatures of 100 and 600° F. Expressed as B.t.u. per pound of liquid the formula is

$$\text{L. H.} = \frac{1}{d} (100.9 - .09t)$$

Expressed in B.t.u. per gallon the equation becomes

$$\text{L. H.} = 925 - .75t$$

The results are within a 10 per cent accuracy range.

SELLING POLICY IN THE EAST IS REVISED

(Continued from Page 125)

unfavorable market for print goods and other cotton cloths.

Paraffin Wax

Refiners have shown no disposition to cut their prices further in the face of the current dull demand, and selling pressure has eased off appreciably during the week. Domestic consuming manufacturers were practically out of the market, but in view of the hand-to-mouth character of the buying during recent weeks, it is expected that considerable replacement buying of fully refined stocks will be necessary after inventories are completed some time during the first half of January.

Refiners are reported curtailing their wax production somewhat, and considerable slackening of output will be necessary to correct the current unfavorable statistical position of the market. However, it is expected that demand will show early improvement, and that increasing domestic production and export demand will aid in stabilizing the market and cutting down excess holdings at the refineries.

Export Markets

Panuco crude has again held the spotlight in the export market this week. One of the big operators in Mexico was reported to have sold 750,000 bbls. for delivery during the last nine months of 1930 at 71 and 72 cents per barrel, less tax, at Mexican loading terminals. The oil is to move to the United Kingdom, Royal Dutch being reported as the buyer, although this latter cannot be confirmed.

Three 10,000-bbl. cargoes of Panuco crude for shipment to the United Kingdom during the closing three quarters of 1930 were also reported booked during the week at 72 cents per barrel at Mexican loading terminals, less tax.

The Gulf export market was rather dull, no cargo fixtures of either gasoline or kerosene being reported.

A cargo of 75,000 bbls. of fuel oil was reported sold at the Gulf to one of the large American railroads at a price of "under 70 cents a barrel," the seller declining to be any more specific.

Export gasoline buyers are believed to be holding off the Gulf market in the expectation of the naming of a lower schedule of prices, although thus far the principal factors in the Gulf market have shown no inclination to reduce their prices. Gasoline is available at other points under the parity with the Gulf quotation, it is reported, and this is expected to force the U. S. Gulf market lower.

East Coast refiners have done a fair export business in cased naphtha and kerosene during the week, and the market is steady to firm, particularly on the latter product. A temporary shortage of some grades of export gasoline is reported in the East, but this situation is expected to be corrected through the slackening in domestic consumption in this area.

Wax and lub oils have been quiet in export markets, but sellers look for an early revision in trading and expect the market to liven up materially during the closing half of the month. Prices, however, continue rather unsettled on both products.

Demand for the minor refined products for shipment abroad is showing seasonal dullness at the moment, although the trade looks for an early revival in activity.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Dec. 28	Dec. 21	Dec. 14
Gasoline	530,000	590,000	500,000
Naphtha	23,000	1,552,000	485,000
Kerosene	69,000	287,400	149,000
Fuel oil	490,000	44,000	5,000
Lubricating oil	1,385,000	2,825,760	1,281,000
Petroleum, ref.	460,000	1,239,800	740,000
	Pounds		
Petrolatum		11,000	10,000
Paraffin wax	3,014,000	3,425,000	2,225,000
Refined			225,000
Scale	340,000	1,058,000	1,423,000
Lubricating grease	1,071,000	965,000	988,000

Imports

Imports of crude and refined oils at the principal United States ports for the week ended December 28 totaled 2,008,000 bbls., a daily average of 286,857 bbls., compared with 1,741,000 bbls., a daily average of 248,714 bbls., in the previous week, and a daily average of 267,000 bbls. for the four weeks ended December 28. Details follow:

	Bbls. of 42 gal.
At Atlantic Coast ports—	
Baltimore	310,000
Boston	132,000
New York	921,000
Philadelphia	176,000
Others	281,000
Total	1,820,000
Daily average	260,000
At Gulf Coast ports—	
New Orleans and Baton Rouge	33,000
Port Arthur and Sabine district	140,000
Tampa	15,000
Total	188,000
Daily average	26,857
At all United States ports—	
Total	2,008,000
Daily average	286,857
Daily average four weeks	267,000

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended December 28 totaled 599,000 bbls., an average of 85,571 bbls. daily, compared with 720,000 bbls., a daily average of 102,857 bbls., for the previous week and a daily average of 93,857 bbls. for the four weeks ended December 28. Details follow:

	Bbls. of 42 gal.
At Atlantic Coast ports—	
Baltimore	155,000
New York	191,000
Philadelphia	108,000
Others	72,000
Total	526,000
Daily average	75,143
At Gulf Coast ports—	
All ports	73,000
Daily average	10,428
At Atlantic and Gulf Coast ports—	
Total	599,000
Daily average	85,571
Daily average four weeks	93,857

Distribution of total California oil receipts is as follows:

Gasoline	599,000

Shipments of California refined products for the East Coast during the week, with ownership of the tanker moving the products, follows:

To New York—92,500 bbls. of distillate on the Dixie Arrow (Standard Transportation Co.-S. O. N. Y.); 75,100 bbls of gasoline on the Baldhill (U. S. Shipping Board); 90,000 bbls. of distillate on the Levant Arrow (Standard Transportation Co.-S. O. N. Y.); 78,000 bbls. of Diesel oil on the Halo (Cities Service Transportation Co.); 79,200 bbls. of gasoline on the Thomas H. Wheeler (Standard Shipping Co.-S.O.N.J.).

CHICAGO BUYING ONLY FOR PRESENT NEEDS

(Continued from Page 124)

smaller refiners with no distribution asked, "Why should the major distributors make any change in their price to the public?" The minor distributors are more than pleased. The public is apparently content and the only reason seemingly for any reduction would be that there is more or less price cutting over the territory. To check this it would be necessary to cut so drastically that it would cause not only havoc in the profits but create precedents that should be avoided for the future good of the industry. Regarding the recent reduction in the local prices, there has been a complaint filed before the Federal Trade Commission under the Code of Trade Practices. It is directed against the refining and distributing organization which initiated the cut in station and tank wagon prices of 2 cents a gallon. The complaint can hardly be that the tank wagon price of 14 cents, less tax, is below costs when Oklahoma gasoline is being laid down in this city at 8¾ cents and less. It is a matter of much curiosity here what will be the outcome of this move.

RESULTS IN OPERATING SMALL CRACKING UNIT

(Continued from Page 128)

it is running now. This oil is of 17.6 A.P.I. gravity.

The furnace of this unit has some features different from the standard Dubbs furnace and is described as follows:

It is of radiant heat design, containing 49 tubes, 20 feet long, 3-inch outside diameter and having a wall thickness of five-sixteenths inch. These tubes give a total of 720 square feet of heating surface. Thirty-three of the tubes are in the radiant heat section and 16 in the convection section. The furnace is side-fired through three firing tunnels and has a Bigelow-Liptak flat suspended arch.

Oil is the fuel used to bring the unit on stream. When in full operation the gas generated in the cracking operation is sufficient to fire the furnace. Air for combustion is preheated by being drawn in through air tunnels passing under the floor of the furnace. The air inlets at the burners are kept closed, thereby eliminating the entrance of excess cold air.

The reaction chamber is a welded vessel made by A. O. Smith Corp. It is 7 feet in diameter and 30 feet high with walls 3 inches thick. It is tested to 400 pounds working pressure, but is operating at only about 225 pounds pressure.

Operating Results

Results obtained by this small unit are given in the report of C. H. Alberding, Dubbs engineer in charge of its construction, as follows:

"Between 12 and 15 per cent of residue is made at the beginning of the run, which is used as fuel oil at the boilers and during the fire-to-stream periods rather than fresh charging stock. This method gives a 48-hour on stream period and also increases the gasoline production per month. It will be comparatively easy to obtain 72-hour cycles as the cleanout goes quite well and in the last run the unit was brought on stream in 3 hours and 10 minutes.

"Pressure distillate production is from 62 to 64 per cent by volume in the tanks and this contains 80 to 82 per cent 437 endpoint gasoline. Four thirty seven endpoint gasoline figured on the raw oil has been around 51 per cent. Operating pressure has been maintained at 225 pounds per square inch."

NEW FUEL RESEARCH LABORATORY IN OTTAWA

The new fuel research laboratory at Ottawa, Canada, under construction for the Federal Government during the past two years, is now complete and most of the equipment will be in operation early this year. It is expected that the laboratory will devote considerable attention to the possibilities of extracting gasoline from Canadian bituminous coals and to the utilization of the Athabaska tar sand deposits as a source of hydrocarbons.

At present Canada's annual imports of coal and coal products approximate $65,000,000, while crude petroleum and petroleum products are imported to a value of about $54,000,000. At the same time Canada has coal reserves in the west estimated to be about one-sixth of the world's coal supply; while, apart from the relatively small production developed in the Turner Valley and elsewhere, the tar sand deposits contain enormous potential supplies of crude petroleum.

The new fuel research laboratory will experiment largely with the possibility of producing gasoline from Canadian coal, utilizing the latest European processes. Equipment of the laboratory includes a "Bergius bomb," which is described as similar in size and appearance to a large-sized washing machine. Coal treated in this machine at a very high temperature and under about 7,000 pounds pressure produces a dark fluid similar in its properties to gasoline. This is accomplished by the breaking up of the coal into its elements, and their reassembling into liquid form. The process is stated to be expensive, but bringing it to a commercial basis will be one of the problems of the fuel research laboratory.

ETHLY GASOLINE CORP. LABORATORY IN TULSA

The Ethyl Gasoline Corp. will establish divisional headquarters in Tulsa with complete laboratory equipment, according to an announcement by J. G. Martin, division manager. A one-story laboratory building with approximately 5,000 square feet of space will be built immediately.

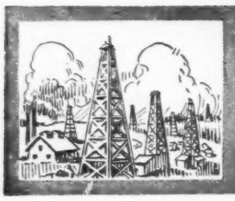
The new division headquarters will take care of the refinery licensees of the corporation in the Southwest including the States of Texas, Arkansas, Louisiana and Oklahoma. The number of licensees has increased from 7 to 25 during the past year. The laboratory will have all the necessary equipment to test Ethyl Gasoline as prepared by the licensees of the corporation. The field engineering crew will also have its headquarters in Tulsa. It is understood that the additional refinery organizations in the Southwest will become licensees of the corporation within a few months.

BUILD OIL REFINERY

CHATHAM, Ontario, Jan. 4.—Seaboard Oil & Refining Co. has been incorporated with head offices at Vancouver, B. C., and will erect a new refining plant close to that city to be in operation early in 1930. A site has been secured on the north shore of Burrard Inlet west of the Second Narrows Bridge, affording deep sea water frontage and rail transportation. The plant will be of 4,000-bbl. capacity, with facilities for continuous treatment of gasoline and batch treating of kerosene. The company will manufacture and market its own brands of gasoline, kerosene, distillate, Diesel oil and fuel oil, with a full line of lubricants and greases.

SHELL WISCONSIN DIVISION

CHICAGO, Jan. 4.—The Shell Petroleum Corp., on January 1 arranged to open a Wisconsin distributing division office in the Century Building at Milwaukee. At the same time various changes were announced for the Chicago division. A. F. Scheidt becomes manager of distribution of the Chicago division; J. P. Murphy, Chicago manager; B. Gans, city sales manager; and E. H. Peterson, Evanston manager.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Jan. 7		Dec. 31		Dec. 24	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.06½	.07	.06½	.07	.06½	.07
56-58 450 endpoint	.06¼	.06½	.06¼	.06¾	.06½	.06¾
*58-60 437 endpoint (U. S. Motor)	.0692		.0685		.0725	
*60-62 437 endpoint	.0687		†.07		†.0725	
*60-62 400 endpoint	.0744		.074		.0750	
*64-66 375 endpoint	.08		.08		.08	
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08⅛	.08¼
64-66 437 endpoint (blend)	.07	.07¼	.07	.07¼	.07	.07¼
NORTH TEXAS—						
56-58 450 endpoint	.06¼	.06½	.06¼		.06¼	.06½
58-60 460 endpoint	.06¼		.06¼		.06¼	.06½
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06¾
60-62 400 endpoint	.06½	.06¾	.06¾	.07	.06¾	.07¼
64-66 390 endpoint	.07⅜	.07⅝	.07⅜	.07⅝	.07⅜	.07⅝
64-66 375 endpoint	.07⅜	.08	.07¾	.08	.07¾	.08
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.07	.07¼	.07	.07¼	.01	.07¼
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.07	.07¼	.07	.07¼	.07¼	.07⅜
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.07	.07¼	.07	.07¼	.07	.07¼
PENNSYLVANIA—						
52-54 Naphtha	.07¼	.07½	.07¼	.07½	.07¼	.07½
54-56 Naphtha	.07¼	.07½	.07¼	.07½	.07¼	.07½
58-60 Gasoline	.07¾	.08	.07¾	.08	.08	.08¼
60 Gasoline	.08	.08¼	.08	.08¼	.08¼	.08½
62 Gasoline	.08¼	.08½	.08¼	.08½	.08¼	.08½
64 Gasoline	.08½	.08¾	.08½	.08¾	.08½	.08¾
68-70 350 endpoint gasoline	.09½	.09¾	.09¾	.10	.09¾	.10
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06¼		.06½		.06½	
56-58 450 endpoint	.06¼	.06½	.06¼	.06⅝	.06⅝	.06⅝
58-60 437 endpoint (U. S. Motor)	.06	.06¾	.06¼	.06¾	.06¼	.06¾
60-62 400 endpoint	.06⅞	.07¼	.07	.07¼	.07⅛	.07⅜
64-66 375 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
68-70 360 endpoint	.08⅛	.08⅜	.08¼	.08½	.08¼	.08⅜
64-66 437 endpoint (blend)	.06½	.07	.06¾	.07	.06⅞	.07
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

	Jan. 7		Dec. 31		Dec. 24	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05½		.06¼		.06½	.06⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05½		.06		.06⅛	.06¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.05		.05⅝		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05		.05⅝		.05½	.05⅝
Grade C, 80-90, 375 e.p., rec. 78%	.05		.05⅜		.05½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05½		.06¼		.06½	.06⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05½		.06		.06⅛	.06¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.05		.05⅝		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05		.05⅜		.05½	.05⅝
Grade C, 80-90, 375 e.p., rec. 78%	.05		.05⅜		.05½	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06		.06¼	.06⅜	.06⅝	.06¾
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.06	.06¼	.06¼	.06½
Grade C, 80-90, 375 e.p., rec. 78%	.05¼	.05½	.05¾	.06	.05¾	.06¼
CALIFORNIA—						
75-78 375-390 endpoint	.08½	.09	.08	.08½	.08	.08½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05½		.06¼		.06½	.06⅝
Grade AA, 80-87, 375 e.p., rec. 90%	.05½		.06	.06⅛	.06¼	.06⅜
Grade B, 76-83.9, 375 e.p., rec. 85%	.05		.05⅝		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05		.05⅜		.05½	.05⅝

BURNING OIL

	Jan. 7		Dec. 31		Dec. 24	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.04⅛	.04½	.04⅛	.04½	.04⅛	.04¾
42-44 water white kerosene	.04⅜	.04⅝	.04⅜	.04⅝	.04⅜	.05
NORTH TEXAS—						
41-43 water white kerosene	.04	.04⅛	.04	.04⅛	.04⅛	.04¼
40-42 water white kerosene	.03⅞	.04	.03⅞	.04	.04	.04⅛
***NORTH LOUISIANA—**						
41-43 water white kerosene	.05		.05		.05	
***ARKANSAS—**						
41-43 water white kerosene	.05		.05		.05	
PENNSYLVANIA—						
43- Kerosene prime water	.05¾	.06	.05¾	.06	.05¾	.06
45 Kerosene water white	.06	.06¼	.06	.06¼	.06	.06¼
46 Kerosene water white	.06¾	.06⅞	.06¾	.07⅞	.06½	.06¾
47 Kerosene water white	.06¾	.07	.06¾	.07	.06¾	.07
300 Mineral Seal	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.07	.07½	.07	.07½
Engine distillate, 42-44, 480 endpoint	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.04	.04¼	.04⅛	.04⅜	.04⅛	.04⅜
42-44 water white kerosene	.04¼	.04½	.04½	.04¾	.04½	.04¾
GULF COAST (Export)—						
41-43 prime white	.07		.07		.07	
41-43 water white	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Jan. 7		Dec. 31		Dec. 24	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.70	.80	.70	.75	.70	.75
18-22 Fuel Oil, per bbl.	.75	.85	.75	.80	.75	.80
20-22 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
22-26 Fuel Oil, per bbl.	.85	.90	.85	.90	.85	.90
24-26 Fuel Oil, per bbl.	.90	1.00	.90	.95	.90	1.00
26-30 Fuel Oil, per bbl.	1.00	1.05	1.00	1.05	1.00	1.05
28-30 Fuel Oil, per bbl. (industrial)	1.15	1.25	1.15	1.25	1.15	1.25
32-36 Gas Oil (industrial)	.02⅞	.03	.02⅞	.03	.02⅞	.03
32-36 Gas Oil (straw color)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
36-38 Distillate	.03½	.03⅞	.03⅝	.03⅞	.03⅝	.03⅞
38-40 Straw Distillate	.03⅝	.04	.03¾	.04	.03¾	.04
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.65	.70	.65	.70	.60	.65
24-26 Fuel Oil, per bbl.	.85	.90	.85	.90	.85	.95
32-36 Gas Oil (straw)	.02⅞	.03	.02⅞	.03	.02⅞	.03
38-40 Straw Distillate	.03¾	.04	.03¾	.04	.03¾	.04
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
30-32 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
***ARKANSAS—**						
33-36 Distillate	.03⅝	.04	.03⅝	.04	.03⅝	.04
30-32 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
16-22 Refinery Fuel Oil, per bbl.	.80	.85	.80	.85	.80	.85
GULF COAST (South Texas)—						
Gas Oil	.04	.04¼	.04	.04¼	.04	.04¼
Bunker C. Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	1.00	1.05	1.00	1.05	1.00	1.05
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04¾	.04½	.04¾	.04½	.04¾
36-40 Fuel Oil	.04⅝	.04¾	.04⅝	.04¾	.04⅝	.04¾
CALIFORNIA—						
33-36 Distillate	.03½	.04	.03½	.04	.03½	.04
26-32 Distillate	.02	.02½	.02	.02½	.02	.02½
15-20 Fuel Oil, Bunker (at tide water)	.70	.80	.70	.80	.70	.80
15-20 Fuel Oil (cargo lots), per bbl.	.60	.75	.60	.65	.60	.65
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.90	.95	.90	.95	.85	.90
18-22 Fuel Oil, per bbl.	.85	.90	.80	.85	.80	.85
28-30 Fuel Oil, per bbl.	1.20	1.30	1.25	1.30	1.25	1.30
32-36 Gas Oil (zero)	.03⅜	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (industrial)	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
36-38 Distillate	.03⅜	.03⅝	.03⅝	.03¾	.03⅝	.03¾
38-40 Straw Distillate	.03⅝	.03⅞	.03¾	.04	.03⅞	.04

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	Jan. 7		Dec. 31		Dec. 24	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 5 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 3 color, 23-28 cold test	.10¾	.11	.10¾	.11	.10¾	.11
200 vis., 4 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 5 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
240 vis., 3 color, 25-30 cold test	.14¼	.14½	.14¼	.14½	.14¼	.14½
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¾	.13	.12¾	.13	.12¾	.13
280 vis., 3 color, 25-30 cold test	.16¾	.17	.16¾	.17	.16¾	.17
280 vis., 4 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 5 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
Cylinder Stocks:						
600, steam refined, light green	.10	.12	.10	.12	.10	.12
600, steam refined, dark green	.09	.11	.09	.11	.09	.11
190-200 vis., D color Bright Stock	.41	.42	.41	.42	.41	.42
150-160 vis., D color Bright Stock	.37		.37		.37	
150-160 vis., E color Bright Stock	.32	.35	.32	.35	.32	.35
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02¾		.03	
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07½	.07¾	.07½	.07¾	.07½	.07¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.15½	.16	.15½	.16	.15½	.16
180, 3 color	.21½	.22	.21½	.22	.21½	.22
200, 3 color	.24	.24½	.23½	.24	.23½	.24
220, 3 color	.28½	.29	.28½	.29	.28½	.29
600, steam refined	.23½	.24	.25½	.26	.25½	.26
635, steam refined	.29½	.30	.30	.30½	.30	.30½
650, steam refined	.30	.30½	.30½	.31	.30½	.31
600, Pennsylvania Flash	.30½	.31	.31½	.32	.31½	.32
630, Pennsylvania Flash	.34½	.35	.34½	.35	.34½	.35
600, E filtered	.30½	.31	.30½	.31	.30½	.31
600, D filtered	.34½	.35	.35½	.36	.35½	.36
Pennsylvania Bright Stock	.43	.44	.44	.45	.44	.45
*122-124 White Crude Scale Wax	.03	.03⅛	.03	.03⅛	.03	.03⅛
*124-126 White Crude Scale Wax	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06	.06½	.06	.06½	.06	.06½
No. 3 color, 200 vis., pale oil	.08½	.09	.08½	.09	.08½	.09
No. 3 color, 300 vis., pale oil	.09¾	.10	.09¾	.10	.09¾	.10
No. 3½ color, 500 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 4 color, 750 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 5 to 6 color, 200 vis., red oil	.07	.08	.07	.08	.07	.08
No. 5 to 6 color, 300 vis., red oil	.08½	.09	.08½	.09	.08½	.09
No. 5 to 6 color, 500 vis., red oil	.09	.10	.09	.10	.09	.10
No. 5 to 6 color, 750 vis., red oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13
No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Jan. 7		Dec. 31		Dec. 24	
Gasoline, U. S. Motor, 58-60, 437	.08⅝	.08¾	.08⅝	.08¾	.08⅝	.08¾
Kerosene, water white, 41-43	.07¾		.07¾		.07¾	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil	.10½		.10½		.10½	
28 pale Paraffin Oil	.07¼		.07¼		.07¼	
285 red Paraffin Oil	.12½		.12½		.12½	
250 red Paraffin Oil	.11½		.11½		.11½	
225 red Paraffin Oil	.10		.10		.10	
200 red Paraffin Oil	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03⅞		.03⅞		.03⅞	
125-127 a.m.p., per lb.	.04		.04		.04	
130-132 a.m.p., per lb.	.04⅜		.04⅜		.04⅜	
133-135 a.m.p., per lb.	.05⅝		.05⅝		.05⅝	
135-137 a.m.p., per lb.	.06		.06		.06	
Petrolatum in barrels, carload lots, per pound:						
Dark Green	.01⅞		.01⅞		.01⅞	
Amber	.03⅜		.03⅜		.03⅜	
Extra Amber	.03½		.03½		.03½	
Cream	.06⅜		.06⅜		.06⅜	
Lily White	.07¼		.07¼		.07¼	
Snow White	.08⅜		.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Jan. 7		Dec. 31		Dec. 24	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.31		.32		.32	
635, steam refined	.33		.34		.34	
650, steam refined	.37		.38		.38	
600, Pennsylvania Flash	.40		.41		.41	
630, Pennsylvania Flash	.44		.45		.45	
600, Warren E	.40		.40		.40	
600 Oil City E	.39		.39		.39	
Light 140-150 Bright Stocks	.52	.53	.52	.53	.52	.53
Dark 140-150 Bright Stocks	.50	.51	.50	.51	.50	.51

LOS ANGELES EXPORT PRICES

	Jan. 7		Dec. 31		Dec. 24	
Kerosene, water white	.04½	.05	.04½	.05	.04½	.05
U. S. Motor Gasoline, 53-55, 437 e.p.	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posts all oil 40 gravity and above at $1.65 on November 24.

Corsicana heavy (January 11)* ..... $ .80

Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler and Mitchell ..... See gravity table, column 3

Howard and Glasscock ..... See gravity table, column 11

Chalk† ..... $ .65

*Includes Westbrook Field.
†Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929)	$ .85
Smackover, 24 gravity and above (May 20, 1929)	1.00
Cotton Valley, below 36 gravity (May 22)	.85
Bellevue (May 29, 1929)	1.30
Urania (May 21, 1929)	1.10
East El Dorado (May 22, 1929)	.85
Other fields ..... See gravity table	

Cotton Valley crude about 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (May 20)*	$1.30
Grade B ..... See gravity table	
Jennings, La. (March 14)†	1.05
Saratoga, Batson, Dayton (March 14, 1927)‡	1.20
Refugio¶	.70
Markham (March 14)§	1.00
High Island (December 14)¶	1.00

*Humble Oil & Refining Co., The Texas Company, Gulf Pipe Line Co., and Sun Pipe Line Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company. ¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo.	$1.40
Salt Creek ..... See gravity table	
Big Muddy	$1.43
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light	1.65
Mule Creek	1.20
Elk Basin	1.65
Lance Creek	1.58
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.65
Los. Soldier (contract, May 22)	1.05
Hamilton Dome (March 14, 1927)	.85
Pedro	1.25
Greybull	1.65
Four Bear	.85
Cat Creek (Montana) (July 27, 1928)	1.48
Sunburst (Montana) (May 23, 1929)	1.75
Torchlight	1.65
Hogback (New Mexico)	1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

(Continued on Page 132)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Okla., Kans., N. C. Texas	2 No. La. and Arkansas	3 Crane, Upton, Crockett, Winkler Pecos, Mitchell, Texas crudes, and Lea, N. Mex.	4 Stephens, Ark.	5 Wheeler (Texas Panhandle)	6 Gray County (Texas Panhandle)	7 Carson and Hutchinson (Texas Panhandle)	8 Salt Creek, Wyo.	9 Grade B and Light Crude (G. Coast)	10 Somerset (South Central Texas)	11 Howard and Glasscock, W. Tex.
24 and above	....	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.70	....	....	....	....	....	1.15	....	.70
25 to 25.9	.90	....	.74	....	....	....	....	....	1.18	....	.74
26 to 26.9	.95	....	.78	....	....	....	....	....	1.21	....	.78
27 to 27.9	1.00	....	.82	....	....	....	....	....	1.24	....	.82
Below 28	....	1.00	....	.90	.90	.90	.90	....	....	....	....
28 to 28.9	1.05	1.05	.86	.94	.90	.90	.90	....	1.27	....	.84
29 to 29.9	1.10	1.10	.90	.98	.90	.95	.90	1.10	1.30	....	.86
30 to 30.9	1.15	1.15	.94	1.02	.95	1.00	.90	1.15	1.33	....	.88
31 to 31.9	1.20	1.20	.98	1.06	1.00	1.05	.90	1.20	1.36	....	.90
32 to 32.9	1.25	1.25	1.02	1.10	1.05	1.10	.95	1.25	1.39	1.05	.92
33 to 33.9	1.30	1.30	1.06	....	1.10	1.15	1.00	1.30	1.42	1.07	.94
34 to 34.9	1.35	1.35	1.10	....	1.15	1.20	1.05	1.35	1.45	1.09	.96
35 to 35.9	1.40	1.40	1.14	....	1.20	1.25	1.10	1.40	1.48	1.11	.98
36 to 36.9	1.45	1.45	1.18	....	1.25	1.30	1.15	1.45	....	1.13	1.00
37 to 37.9	1.50	1.50	....	....	1.30	1.35	1.20	1.50	....	1.15	....
38 to 38.9	1.55	1.55	....	....	1.35	1.40	1.25	....	....	1.17	....
39 to 39.9	1.60	1.60	....	....	1.40	1.45	1.30	....	....	....	....
40 to 40.9	1.65	1.65	....	....	1.45	1.50	1.35	....	....	....	....
41 to 41.9	1.70	1.70	....	....	1.50	1.55	1.40	....	....	....	....
42 to 42.9	1.75	1.75	....	....	1.55	1.60	1.45	....	....	....	....
43 to 43.9	1.80	1.80	....	....	1.60	1.65	1.50	....	....	....	....
44 and above	1.85	1.85	....	....	1.65	1.70	1.55	....	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule May 20, 1929, making price below 26 gravity 70 cents per barrel, 26-26.9 gravity 75 cents, 27-27.9 gravity 85 cents, 28-28.9 gravity 90 cents, 29-29.9 gravity 95 cents, 30-30.9 gravity $1.05, and 31-31.9 gravity $1.15, with balance of the price schedule as shown above. Top price of Empire Pipe Line Co., effective November 14 for Oklahoma City crude oil, is for 40° and above.

Oklahoma—Carter Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, May 20.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran, Prairie Oil & Gas Co., Sinclair Oil & Refining Co., Humble Oil & Refining Co., The Texas Company and Gulf Refining Co., May 20.

Kansas—Prairie, Sinclair, The Texas Company and Carter, May 20.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only) May 22. Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., Magnolia Petroleum Co., schedule applies to Pine Island, Haynesville, Bull Bayou, Louisiana and El Dorado, Ark., light crude.

Column 3—Humble Oil & Refining Co. and Magnolia Petroleum Co., May 20.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., May 20, 1929.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., May 20, 1929 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

Column 11—Humble Oil & Refining Co., November 26.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective October 31, 1929)

Gravity—	1 Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Huntington Heights, Alamitos Heights, Signal Hill (Nov. 8) Athens, Inglewood, Rosecrans-Dominguez Watsonville	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Buena Vista, Lost Hills, Belridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs (Nov. 8)	6 Santa Maria, Coalinga	7 Wheeler Ridge, Fruitvale	8 Orcutt, Ventura, Rincon	9 Ventura Ave.,* Potrero†	10 Elwood Torrace	11 Seal Beach (Nov. 4)
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.40	....	.75
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.40	....	.80
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.40	....	.85
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.40	....	.89
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.40	....	.93
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.40	....	.97
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.94	.40	....	1.01
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.60	....	1.05
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	.60	....	1.09
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	.60	....	1.13
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	.60	....	1.17
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	.60	....	1.21
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	....	.60	....	1.25
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	.60	....	1.30
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	.60	....	1.35
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	.60	....	....
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	.60	1.16	....
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	.60	1.22	....
36 to 36.9	1.59	....	....	....	1.50	....	....	....	.60	1.28	....
37 to 37.9	1.65	....	....	....	1.55	....	....	....	.60	1.34	....
38 to 38.9	1.71	....	....	....	1.60	....	....	....	.60	1.40	....
39 to 39.9	1.77	....	....	....	1.65	....	....	....	.60	1.46	....
40 to 40.9	1.83	....	....	....	....	....	....	....	.60	1.52	....
41 to 41.9	1.89	....	....	....	....	....	....	....	.60	1.58	....
42 to 42.9	1.95	....	....	....	....	....	....	....	.60	1.64	....

*October 22. †Sunset Pacific Oil Co., October 26.

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

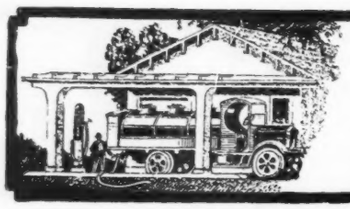
Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Jan. 7

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago†	17.0	18.0	3.0	13.0
Decatur, Ill.	19.2	20.2	3.0	13.1
E. St. Louis	15.4	15.4	3.0	12.2
Joliet	19.4	20.4	3.0	13.3
Peoria	19.2	20.2	3.0	13.1
Quincy	18.2	20.2	3.0	12.9
Davenport, Ia.	19.5	20.5	3.0	13.3
Des Moines	19.5	20.5	3.0	13.3
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	12.9
Duluth, Minn.	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis	20.2	21.2	3.0	13.9
LaCrosse, Wis.	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	18.3	19.3	2.0	13.1
Detroit, Mich.	19.8	20.8	3.0	14.7
Grand Rapids	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne	20.4	21.4	4.0	14.4
Indianapolis	20.2	21.2	4.0	14.2
South Bend	20.4	21.4	4.0	14.4
Fargo, N. D.	21.9	22.9	3.0	15.9
Huron, S. D.	21.3	22.3	4.0	14.7
Sioux Falls	20.1	21.1	4.0	14.4
K. C., Mo.*	18.8	19.8	3.0	11.6
Springfield*	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.3
St. Joseph	18.5	19.5	2.0	12.2
Wichita, Kans.	17.8	18.8	3.0	11.8
Bartlesville, Ok.	18.5	19.5	4.0	11.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	12.9
V. M. & P. Naphtha	16.7	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	17.0	21.0	4.0	12.0
Fort Worth	17.0	20.0	4.0	12.0
Houston	15.0	19.0	4.0	11.0
San Antonio	15.0	19.0	4.0	11.0
El Paso	16.0	20.0	4.0	16.0
Texarkana	17.0	19.0	4.0	12.0
Muskogee*	15.0	17.0	4.0	10.0
Okla. City*	17.0	20.0	4.0	10.0
Tulsa*	15.0	19.0	4.0	10.0
Ft. Smith, Ark.	15.0	17.0	5.0	12.0
Little Rock	17.0	19.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15.5
Butte, Mont.	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	20.0	22.0	5.0	17.0
Boise, Idaho	23.5	26.5	4.0	19.0
Twin Falls	23.5	27.5	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Pittsburgh, Pa.	15.0	*21.0	...	13.0
Philadelphia	15.0	*21.0	...	13.0
Scranton	15.0	*21.0	...	13.0
Allentown	15.0	*21.0	...	13.0
Altoona	15.0	*21.0	...	13.0
Erie	15.0	*19.0	...	13.0
Dover, Del.	18.0	20.0	3.0	13.0
Wilmington	18.0	20.0	3.0	13.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	13.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven	18.0	20.0	2.0	15.0

*Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	18.0	20.0	2.0	15.0
New York*	16.0	18.0	2.0	15.0
Buffalo	18.0	18.0	2.0	14.0
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.0	20.0	2.0	15.0
Boston, Mass.	18.0	20.0	2.0	15.0
Augusta, Me.	20.0	22.0	4.0	15.0
Manch'tr, N. H.	20.0	22.0	4.0	15.0
Burlington, Vt.	18.0	20.0	4.0	15.0

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.	16.0	20.0	4.0	16.5
Augusta	20.0	22.0	4.0	15.5
Macon	21.0	23.0	4.0	16.5
Savannah	22.0	24.0	4.0	15.5
Birm'ham, Ala.	17.0	19.0	4.0	13.0
Mobile	18.0	20.0	4.0	15.0
Montgomery	19.0	21.0	4.0	16.5
Clarks'le, Miss.	18.0	20.0	5.0	12.5
Jackson	19.0	21.0	5.0	13.0
Natchez	20.5	20.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla.	22.0	24.0	6.0	14.5
Miami	23.0	25.0	6.0	15.5
Pensacola	18.0	20.0	6.0	14.5
Tampa	20.0	22.0	5.0	14.5
Lexington, Ky.	20.0	22.0	5.0	15.5
Covington	19.0	20.0	5.0	15.5
Louisville	21.0	23.0	5.0	13.0
Ashland	20.0	21.0	5.0	15.5
Catlettsburg	20.0	21.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
San Francisco	20.0	24.0	3.0	15.5
Los Angeles	19.5	23.5	3.0	15.5
Reno, Nev.	24.0	26.0	4.0	19.0
Portland, Ore.	20.5	24.5	3.0	16.5
Seattle, Wash.	20.5	23.5	3.0	16.5
Tacoma	20.5	23.5	3.0	16.5
Spokane	24.5	27.5	3.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	20.25	22.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21.75	23.75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlantic City	16 5	18 5	2 0	13 5
Newark, N. J.	15 5	17 5	2.0	12 0
Annapolis, Md.	18.0	20.0	4 0	13 0
Baltimore	17.2	19.2	4 0	10 5
Cumberland	19 0	21 0	4 0	14 0
Washington	15 7	17.7	2 0	12 7
Danville, Va.	19.8	21.8	5 0	13.8
Norfolk	18.3	20.3	5 0	11.0
Petersburg	19 3	21 3	5 0	13 3
Roanoke	20.0	22 0	5 0	14 0
Richmond	18.7	20 7	5 0	12.7
Charles'n W.Va.	18 5	20 5	4.0	13.5
Keyser	19 1	21 1	4 0	14.1
Parkersburg	17 2	19 2	4 0	12 2
Wheeling	18 4	20.4	4.0	13.4
Charlotte, N. C.	20 3	22.0	5.0	14.3
Hickory	20 8	22 8	5.0	14 8
Mt. Airy	20 5	22.5	5 0	14 5
Salisbury	20 7	22 7	5 0	14.7
Charleston, S.C.	19.6	21 6	6.0	12.5
Columbia	21 2	23 2	6.0	14 2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points*	18.0	19.0	4.0	†12.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 14 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.*	18.0	20.0	5.0	12.0
Baton Rouge	16.0	18.0	4.0	14.5
Alexandria	19.0	21.0	5.0	16.0
Lafayette†	20.0	22.0	5.0	14.0
Lake Charles†	20.5	22.5	5.0	16.0
Shreveport	16.0	18.0	4.0	15.0
Knoxv'le, Tenn.	20.0	22.0	5.0	16.0
Memphis	18.0	20.0	5.0	12.5
Chattanooga	20.0	22.0	5.0	13.0
Nashville	19.0	19.0	5.0	16.0
Bristol	19.0	20.0	5.0	14.0
Lt. Rock, Ark.	19.0	21.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana Kerosene prices include 1-cent state tax and 1-cent parish tax.
†Includes 1-cent parish tax.

TANK WAGON PRICES

December 27—Standard Oil Co. of Louisiana reduced kerosene 1 cent in Chattanooga, Tenn., to 13 cents.

December 28—Standard Oil Co. of New Jersey reduced the gasoline tank wagon and station prices 2 cents in Mount Airy to 19 cents and 21 cents.

December 30—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 1½ cents to 16 cents and 18 cents.

January 1—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 2 cents in Bristol, Tenn., to 19 cents and 21 cents.

January 6—Standard Oil Co. of New Jersey revised the tank wagon prices on both gasoline and kerosene throughout its territory. The new tank wagon price is based on the cargo market plus an average differential of 6½ cents on gasoline, plus freight and tax. The station price in all cases is 2 cents above the tank wagon. As a result of the revision there was a general reduction of prices. The detailed prices are shown in the accompanying table.

PRAIRIE PIPE LINE DELIVERIES

Crude oil deliveries by Prairie Pipe Line Co. for December totaled 6,410,734 bbls., a daily average of 206,798 bbls. This compares with 6,191,204 bbls., or 206,373 daily, in November.

For the year 1929 the deliveries of crude oil by Prairie Pipe Line Co. aggregated 75,093,660 bbls., compared with 66,504,613 bbls. in 1928 and 64,525,904 bbls. in 1927, as shown in the following tabulation:

	1929	1928	1927
January	5,914,555	5,394,759	4,850,792
February	5,203,884	5,006,573	4,736,228
March	5,880,544	5,253,096	5,449,688
April	5,952,638	4,901,433	5,484,826
May	6,098,712	5,480,558	5,641,515
June	6,482,036	5,249,564	5,505,552
July	7,048,297	5,701,371	5,788,134
August	6,929,411	6,021,444	5,786,822
September	6,552,481	5,794,603	5,321,180
October	6,429,164	6,254,380	5,156,297
November	6,191,204	5,461,567	5,460,059
December	6,410,734	5,985,265	5,344,811
Total	75,093,660	66,504,613	64,525,904

The increase last year over the 1928 volume amounted to almost 14 per cent, while compared with 1927 the increase was 17 per cent.

OPTION EXTENDED

FORT WORTH, Tex., Jan. 7.—The 30 days' option of the Moody-Seagraves interests to purchase the Magnolia Gas Co.'s properties in Louisiana and Texas has been extended for another 30 days. The Magnolia Gas Co. is a subsidiary of the Magnolia Petroleum Co.

CRUDE OIL PRICES

(Continued from Page 131)

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

Darst Creek (Jan. 2, 1930)*	$1.25
Luling (May 2)*	.90
Miranda (May 20, 1929)†	.90
Salt Flat (May 20, 1929)§	1.25
Rockdale Minerva (April 15)	
Below 28 gravity	1.25
38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cen s per cwt. freight.
§Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective October 1, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penna. Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.70
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929)	1.70
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines (May 22, 1929)	1.80
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Nov. 12, 1929)	1.55
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60
Wayne dis.rict oil in Cumberland Pipe Lines	1.42

MDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)‖	1.35
Western Kentucky	1.68
Dundee, Mich. (Sept. 17, 1929)‖	
...Same as Mid-Continent gravity scale	
Upper and Lower Traverse sands, Mich.‖	
...Same as Mid-Continent gravity scale	
Midland, Mich. (December 6, 1929)*	$1.50
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil in line in Stoll Oil Refinery Co. in Oil City, Ky. (Oct. 7, 1929)§	1.70
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.20

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Revelopment Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$ 64

*Based on November transactions for deliveries during November and December. Price exclusive of taxes.

NATIONAL ADVERTISING

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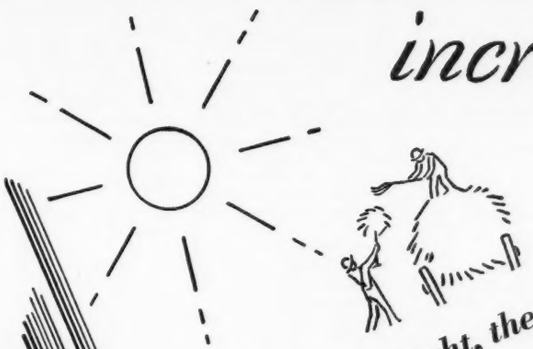

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Oil Shares Believed Ready for Rise

Marking Time, Along With Other Groups of Securities, but More Favorable Conditions in Industry Create Feeling of Optimism

Along with other groups of the better class of securities, the oil shares marked time the last week, though signs of a stiffening market were seen. The oils continue to be pointed out as in a favorable strategic position with respect to the recovery that is expected to set in, following the recent stock exchange crash. Conditions affecting the intrinsic value of the securities of major oil companies have improved appreciably in the past few weeks and there is a decided feeling that when the general stock market upswing begins the oils will be among the leaders in the rise. Oil shares, it is reported, have been moving into strong hands in the last two months.

Superior-Petroleum Exploration

Plans to withdraw from the Kentucky oil fields, recently announced by officials of the Superior Oil Corp. of Tulsa, have been furthered by the sale of all settled production of the company in seven eastern counties in that State to the Petroleum Exploration, Inc., for $700,000. Superior Oil will concentrate its operations in the Mid-Continent fields.

Mid-Continent Petroleum

Mid-Continent Petroleum Corp. declared the regular quarterly common dividend of 50 cents a share payable February 15 to stock of record January 15.

Amerada Corp.

Amerada Corp. declared the regular quarterly dividend of 50 cents, payable January 31 to stock of record January 15.

Rio Grande Oil

Rio Grande Oil Co. has declared a dividend of 50 cents, payable January 25 to stock of record January 10. Company states this places the stock on a quarterly basis of 50 cents. No action was taken on stock dividends.

On March 11, 1929, Rio Grande Oil Co. announced two cash dividends of $1 each, one payable July 25, 1929, and the other on January 25, 1930.

The present announced rate, 50 cents a share quarterly, is payable on January 25, which is the same date announced last March for the payment of $1 a share semiannually. It would appear that this $1 semiannual cash dividend has been supplanted by the new 50 cents a share declaration, which is designated as a quarterly basis by the company.

Also, last March, Rio Grande declared two semiannual stock dividends of 1½ per cent each, payable on April 25 and October 25, 1929. In the dividend action just announced no stock dividends were declared.

In its statement to the New York Stock Exchange on April 4, 1929, in connection with listing additional stock arising from the first 1½ per cent stock dividend, the company stated:

"In addition to the stock dividend of 1½ per cent covered by this application, payable April 25, 1929, and the cash dividend, payable July 25, 1929, the directors on March 11, 1929, stated their intention of declaring additional dividends of 1½ per cent, payable in stock October 5, 1929, and $1, payable in cash, January 25, 1930, to stockholders of record January 5, 1930."

Pan American

About 80 per cent of the stock of Pan American Petroleum & Transport Co. is now held by Standard Oil Co. of Indiana as a result of acceptance of the offer of exchange of seven shares of the Indiana company's stock for six shares of Pan American. At a recent date there were outstanding 3,442,608 shares of the common and common B stock of Pan American Petroleum and Transport Co.

R. G. Stewart, president of Pan American Petroleum & Transport Co., and E. G. Seubert, president of Standard Oil Co. of Indiana, are now on their way to Venezuela to survey properties of the former company and its subsidiaries, Lago Oil & Transport Co. and Lago Petroleum Corp.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

July 12	55.69	Oct. 12	59.75
July 19	56.83	Oct. 19	58.70
July 26	55.62	Oct. 26	54.59
Aug. 3	55.09	Oct. 31	42.29
Aug. 10	54.15	Nov. 8	48.31
Aug. 17	60.32	Nov. 15	47.61
Aug. 24	60.61	Nov. 22	47.76
Aug. 31	60.90	Nov. 29	48.60
Sept. 7	59.16	Dec. 4	50.60
Sept. 14	60.40	Dec. 11	50.51
Sept. 21	57.93	Dec. 18	49.24
Sept. 28	58.63	Dec. 24	47.36
Oct. 5	57.00	Dec. 31	48.68

Sinclair-Rio Grande

Preliminary negotiations for acquisition of the Rio Grande Oil Co. by the Sinclair Consolidated Oil Corp. are understood to be under way. Officials of the Sinclair company refused to deny

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended December 31 Sales	Week ended December 31 High	Week ended December 31 Low	Week ended December 31 Close	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
42⅝	17½	3,200	21	18	21	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-31-30	32⅞	24¼	37⅝	27⅝	43⅞	27⅛
64¾	12½	2,200	24⅞	22⅛	22⅛	American Republics Corp.	(sh)	209.180	N.P.	.....	3-20-29	74	39⅞	82⅛	35⅛	85	51⅛
47¼	34½	20	34½	34½	34½	Associated Oil		$57,260,300	$25	50cQ	12-31-29	60	44¾	50¼	35	53⅜	37½
77⅞	30	5,300	38	37⅛	38	Atlantic Refining		$50,000,000	$25	25cQ	12-16-29	128⅜	97	131⅜	104	66⅜	50
49⅛	20	7,100	23¾	23¼	23¾	Barnsdall Corp.		$45,235,650	$25	50cQ	12- 7-29	33½	23½	35½	20¾	53	20
47⅛	18	9,100	23⅞	22¾	23⅜	Continental Oil of Delaware	(sh)	4,741,554	N.P.	.....	3-31-27	..	..	..	..	..	..
94¾	42¼	1,300	50¾	49¾	49¾	General Asphalt		$20,785,400	N.P.	50cQ	.....	94½	50	96¾	65	94⅞	68
109	26	3,600	57¼	55⅝	57	Houston Oil		$25.000.000	$100	.....	.....	72	50¼	175¾	60⅛	167	79
39⅜	17¾	2,700	22⅝	22⅛	22¼	Independent Oil & Gas	(sh)	1,333,572	N.P.	50cQ	1-31-30	34	19⅝	32¾	17⅝	38⅜	21¾
53	13¼	6,600	18½	18	18⅜	Indian Refining		$12.307,370	$10	.....	5-31-24	12¾	7½	12⅛	7⅝	39⅝	9
38⅜	16½	No sales.				Lago Oil & Transport	(sh)	3.992,122	N.P.	.....	5- 1-27	25⅞	16½	37¾	20½	39⅛	27¾
18	7	4,300	9	8¾	8¾	Louisiana Oil Refining	(sh)	1,190.063	N.P.	.....	.....	19⅞	12	18⅛	10	19¾	9⅜
18½	5⅛	1,500	5½	5½	5½	Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	28	16½	22¾	12	25½	12½
69⅜	9¼	4,100	18¾	18	18½	Mexican Seaboard	(sh)	1,276.873	N.P.	.....	12-15-20	13¾	6	9¼	3	73	4⅝
39⅞	22⅛	500	27¼	27⅛	27¼	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	37	20½	39⅜	25½	44½	25⅛
5⅛	¾	No sales.				Middle States Oil		$24.298.850	$10	.....	7- 1-23	2½	½	3¾	1⅝	7⅜	2⅜
69	40½	200	58	58	58	Pan American P. & T.		$50,084,700	$50	.....	10-20-27	76½	56⅛	65⅞	40⅛	54⅞	38¼
69¼	40½	2,100	60	59½	59⅝	Pan American P. & T. "B"		$121,105.050	$50	.....	11-15-24	78⅜	56⅞	66⅜	40¼	58⅞	37¾
18½	13⅝	No sales.				Pan American Western "B"	(sh)	400,000	N.P.	.....	1-30-27	46	30	37⅞	16¾	28⅜	15½
15¼	3	No sales.				Panhandle P. & R.	(sh)	199.370	N.P.	.....	.....	32	4½	18⅞	8	21¾	11½
76	47½	No sales.				Panhandle P. & R. pfd.		$2,564,400	$100	.....	7- 2-23	99⅜	51	83	54	108	70
47	24¼	5,800	35⅜	34	35	Phillips Petroleum	(sh)	2,406,796	N.P.	50cQ	1- 2-30	57⅜	40	60¼	36¼	53⅞	35¼
3⅜	1	No sales.				Pierce Oil Corp.		$29.622,831	$25	.....	.....	..	..	1⅛	½	5¼	⅛
5⅞	½	200	2⅜	2⅜	2⅜	Pierce Petroleum	(sh)	2.500,000	N.P.	.....	.....	7	2¼	5½	2½	7	3½
65⅝	40½	800	51½	51⅛	51½	Prairie Oil & Gas		$61,720,125	$25	50cQ*	12-31-29	60¼	48	55½	45⅝	68	46
65	45	300	59⅜	59⅜	59⅜	Prairie Pipe Line		$101,250,000	$25	75cQ†	12-31-29	137½	122½	190	130¾	280	172
25⅞	4	900	8⅞	8	8⅞	Producers & Refiners		$37,438,950	$50	.....	9-15-23	20¾	11	33⅞	16¾	29⅞	16
46⅜	25½	No sales.				Producers & Refiners pfd.		$2,845,350	$50	.....	5- 1-25	41⅜	30¾	50	36⅞	49⅝	41
30⅜	20	7,900	24¼	23¼	24¼	Pure Oil		$75,959,250	$25	37½cQ	12- 2-29	31	25¼	33½	25	31⅝	19
49⅝	20	4,805	25	24¼	25	Richfield Oil		$47,964,650	$25	50cQ	11-15-29	27½	22	28⅝	25⅜	56	23
42½	15	3,500	19⅜	18¾	19	Rio Grande Oil	(sh)	1,200,000	N.P.	$2.00A	7-25-29	..	..	..	..	37½	32
64	43¼	2,100	53⅛	52½	52¾	Royal Dutch, N. Y.	(sh)	611,303	$1.873	.....	9-13-29	57⅜	47⅜	54½	44¼	64	44⅝
55	43¾	No sales.				Shell Transport & Trad.		£19,654,274	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	57½	40⅝
31¾	19	1,800	23⅜	22¾	23⅜	Shell Union Oil	(sh)	13,000,000	N.P.	35cQ	12-31-29	31	24	31¾	24⅝	39¼	23¼
40⅛	15	1,300	25¾	23⅜	25¾	Simms Petroleum		$8,060,380	$10	40cQ	12-14-29	25⅝	15⅛	25⅜	14¼	27¼	18⅛
45	21	11,900	24⅜	23¼	24⅜	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	1-15-30	24⅞	15¾	22⅜	15	46¾	17⅜
111	103	200	109⅝	109⅝	109⅝	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-29	99½	90	104½	97	110	102½
46½	28	2,800	31⅞	30⅝	31⅞	Skelly Oil		$27,237,750	$25	50cQ	12-16-29	37⅛	26⅝	37⅜	24⅛	42⅝	25
81⅞	51½	2,500	61⅜	60	61⅛	Standard Oil of Cal.	(sh)	12,594,098	N.P.	62½cQ	12-16-29	63⅝	51½	60¾	50⅜	80	53
83	48	22,400	66½	65	66⅛	Standard Oil of N. J.		$620,079,800	$25	25cQ*	12-16-29	46⅜	37½	41⅜	35⅛	59⅜	37¾
48¼	31¾	12,000	33⅝	32⅝	33⅜	Standard Oil of N. Y.		$434,094,575	$25	40cQ	12-16-29	47¼	30⅜	34⅛	29¾	44¼	28¾
86⅜	55	No sales.				Sun Oil	(sh)	1,297,627	N.P.	25cQ	12-16-29	41¾	30⅛	34⅞	30	77	31½
24	5¼	2,100	6⅜	6⅛	6¼	Superior Oil Corp.	(sh)	2,324,938	N.P.	.....	12-20-20	..	..	..	..	..	..
71⅞	50	2,800	56⅜	55½	56½	The Texas Corporation		$211,076,650	$25	75cQ	1- 1-30	58	48	58	45	74⅜	50
23⅞	9½	3,500	10⅛	9⅞	10	Texas Pacific Coal & Oil Co.		$8,380,340	$10	2½%A‡	12-31-29	19½	12	18⅞	12	26⅝	12⅛
40	14	No sales.				Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	12-31-29	39¼	27	29⅛	19	41½	19⅝
97½	85⅛	No sales.				Tide Water Oil 5½% pfd.		$20,705,200	$100	$1.25Q	11-15-29	103	87¼	90⅛	85	100⅛	86
23½	10	4,500	12	11¾	12⅞	Tide Water Associated	(sh)	4,796,158	N.P.	30cS	2-15-30	27	20⅞	19⅛	15¾	25	14¾
90⅞	74⅛	500	85	84	85	Tide Water Associated pfd.		$72,844,300	...	$1.50Q	2- 2-30	..	..	..	..	..	..
15¼	5⅛	19,300	8⅝	8¼	8½	Transcontinental Oil	(sh)	3.742,029	N.P.	.....	.....	5½	3	10⅜	3¾	14¾	7¼
57	42¼	800	46	44¼	45¾	Union Oil of California		$94,798,100	$25	50cQ	11- 9-29	58⅜	37¼	56½	39⅝	58	42⅜
163¾	121⅞	No sales.				Union Tank Car		$31,061,200	$100	$1.25Q	12- 2-29	120⅜	84¼	127½	94	128⅛	110
42⅞	15	1,400	20⅝	20	20¼	Warner-Quinlan	(sh)	356,000	N.P.	50cQ	1- 2-30	30⅛	23½	34½	24½	44⅞	26
38	25	x400	27¼	26¾	27¼	White Eagle Oil & Refining	(sh)	490,000	N.P.	50cQ	1-20-30	29¾	25⅛	27½	20	38	20⅛
29¾	12⅞	300	14⅛	14	14⅛	Wilcox Oil & Gas	(sh)	2,400,000	N.P.	.....	5-10-28	..	..	..	..	..	.

*Plus extra dividend of 25 cents †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

or affirm the report of the negotiations, but it was understood that this attitude was determined by the fact that the investigation of the Rio Grande properties had not yet reached a point to enable the Sinclair officials to make a decision as to the future progress of the deal.

The Rio Grande Oil Co. constitutes a complete unit for the production, refining and marketing of petroleum. Its producing acreage is in Los Angeles and Santa Barbara Counties, California, and in Loving and Howard Counties, Texas. It has large undeveloped acreage in these states and also in New Mexico. It operates bulk and service stations in California, Texas, Arizona and New Mexico.

The possibility of the merger interested oil men in New York because, if consumated, it will be the entrance of the Sinclair company into the California producing, refining and distributing field.

Galena Oil

Galena Oil Corp. is now functioning as successor to Galena-Signal Oil Co. of Pennsylvania, which has been dissolved. The new corporation, which omits the word "Signal" from its title, is incorporated under Delaware charter, with main offices in Franklin, Pa.

Eureka Pipe Line

Eureka Pipe Line Co. declared the regular quarterly dividend of $1, payable February 1 to stock of record January 15.

Associated Oil

The stockholders of the Associated Oil Co. have received an offer from Tide Water Associated Oil Co. to exchange three shares of Tide Water Associated no par value common stock for each share of the capital stock of Associated Oil Co., according to an announcement from William F. Humphrey, president of Associated.

Acceptance of this offer will not deprive the present holders of Associated Oil Co. stock of the current dividend of 50 cents per share payable on such stock December 31, 1929. The exchange offer will expire February 15, 1930. Stockholders of Associated who avail themselves of this exchange offer prior to close of business January 31, 1930, will participate in Tide Water Associated's common dividend of 30 cents per share payable February 15, 1930.

Tide Water Associated Oil Co. now owns 95.53 per cent of the capital stock of Associated Oil Co. and 95.42 per cent of the common stock of Tide Water Oil Co. An offer to the minority common stockholders of Tide Water Oil Co. to exchange their stock for common stock of Tide Water Associated Oil Co. is also being made at this time.

Tide Water Associated has recently announced resumption of dividend payments in the amount of 60 cents per share on the common stock, payable 30 cents per share on February 15, 1930, to stockholders of record at the close of business January 31, 1930, and 30 cents per share on August 15, 1930, to stockholders of record at the close of business July 31, 1930.

United Gas

The United Gas Co. has offered to minority stockholders of the Houston Gulf

(Continued on Page 138)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended December 31 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
72c	⅛	100	3/16	3/16	3/16	Amer. Con. Oilfields	$11,018,000	$5	.....	.....	$6.75	.45	2 7/16	.55	1½	.53
8⅝	1¼	1,000	1½	1½	1½	Amer. Maracaibo	(sh) 700,000	N.P.	.....	.....	..	..	7½	2¾	9½	3⅛
5	1½	No sales.				Argo Oil	(sh) 683,971	$10	.....	.....	..	..	2¾	1	4½	2¼
62	7⅞	No sales.				British-American	(sh) 1,311,321	N.P.	25cQ*	1- 2-30	85¼	60	40	20½	55	32¾
4⅞	1	2,100	1⅜	1	1	Carib. Syndicate	$131.250	25c	.....	.....	28⅜	9¼	28¼	15½	4½	3⅞
68⅛	20	18,300	26½	25½	26½	Cities Service	(sh) 24,290,359	N.P.	.02SM	1- 2-30	..	..	58¾	40¼	90⅞	54
98¾	84	No sales.				Cities Service pfd.	(sh) 1,500,000	N.P.	50cM	1- 2-30	..	..	95⅜	87	103½	94½
2	½	800	¼	¼	¼	Colombia Syndicate	$2,000,000	$1	.....	.....	3½	1¾	3⅞	1⅛	3¼	.76
11⅛	2½	300	5⅜	4½	5⅜	Cons. Royalty	$5,000,000	$10	15cQ	10-25-29	..	..	9¾	6⅜	8⅞	6¼
11¾	5⅝	5,600	6¼	6⅛	6⅛	Creole Petroleum	(sh) 5,977,873	N.P.	.....	.....	16	10	14⅞	9½	17½	9½
2½	¼	600	⅜	¼	¼	Crown Central	(sh) 578,000	N.P.	.....	.....	..	..	3	.50	3¼	.76
26	6½	x20,800	8½	8½	8½	Darby Petroleum	(sh) 1,019,392	N.P.	25cQ	1-15-30	7⅞	6¾	12	4	33½	3¼
11	2	400	4⅞	4⅞	4⅞	Derby Oil & Refining	(sh) 500.000	N.P.	.....	.....	..	..	2½	74	2¼	1
44	20¾	No sales.				Derby Oil & Refining pfd.	(sh) 48,500	N.P.	.....	.....	..	..	16¾	4	21⅛	7½
209	115	300	138¼	137	138¼	Gulf Oil Corp.	(sh) 4,504,921	$25	37½cQ	1-1-30	98	92	118	86¼	165	101⅛
2⅞	⅜	400	1	1	1	Intercontinental Pet.	$5,682,000	$5	.....	.....	$3.00	.83	2½	.80	3⅜	1
3⅝	1¼	500	1½	1½	1½	Kirby Petroleum	(sh) 750,000	N.P.	.....	.....	..	..	2¼	1⅛	3	1¼
6⅛	1	400	1¼	1	1¼	Leonard Oil & Dev.	$50,000,000	$25	.....	.....	12¼	5¾	10⅞	5⅛	9⅜	5⅛
38⅞	18	500	20	19½	20	Lion Oil & Refining	(sh) 250,000	N.P.	50cQ	1-31-30	27	20	27½	20	43⅞	20
67⅞	28	300	35½	35	35½	Lone Star Gas	(sh) 5,000,000	N.P.	20cQ	12-31-29	46	30	59⅜	37	69⅛	48½
1¼	¼	300	5/16	¼	¼	Magdalena Syndicate	(sh) 850.000	$1	.....	.....	2⅞	1	2⅞	.80	1⅞	.50
38½	14	No sales.				Margay Oil	(sh) 160,000	N.P.	50cQ	1-10-30	34	12½	52	12	48½	32
6⅜	2½	No sales.				Mexico-Ohio Oil	.....	...	.....	.....	8	5½	12⅛	5	8	2¾
1½	¼	No sales.				Mountain & Gulf	$4,000,000	$1	2cQ	1-15-30	1¾	1⅛	1½	1	1¾	.76
22⅞	7	2,000	8½	7⅞	8½	Mountain Producers	$1,682,182	$10	40cQ	1- 2-30	26	23	29¼	22¾	28⅞	19½
5	2¼	No sales.				New Bradford Oil	$1,095,291	$5	12½cQ	1-15-30	6⅝	5	5⅞	4⅝	5⅝	4¼
9⅜	2¼	400	4	3¾	4	New Mex. & Arizona	$1.000.000	$1	.....	.....	..	..	16	9¼	11⅞	7⅛
18½	6¼	No sales.				North Central Texas	(sh) 400,000	N.P.	15cQ	12- 2-29	..	..	12¾	9½	14¼	8½
3½	½	2,700	1	⅞	1	Pandem	(sh) 489.875	N.P.	.....	.....	10⅛	5⅞	9⅜	3¼	6	2⅛
10¼	1⅞	900	3⅛	2⅜	3⅛	Pantapec Oil	(sh) 1,506,600	N.P.	.....	.....	12¼	11¾	12⅛	7	15⅝	8½
7¾	4⅜	No sales.				Pennok Oil	(sh) 150,000	N.P.	.....	.....	22¾	12	13½	5⅛	7¾	4⅞
16	9⅝	No sales.				Red Bank Oil	(sh) 250.000	N.P.	.....	.....	17	8½	24⅜	7	18	4⅞
8½	1⅛	400	2½	2½	2½	Reiter-Foster	(sh) 388,584	N.P.	10cQ	12- 2-29	30¼	12	15½	3½	12⅞	4⅛
11	3	No sales.				Ryan Consolidated	(sh) 500,000	N.P.	.....	.....	7	4½	7	4½	12	4⅛
5⅞	1⅞	No sales.				Salt Creek Consolidated	(sh) 1,286,300	$10	10cQ	1- 2-30	10	7⅛	8	5¼	7¼	5½
25⅞	9	400	10½	10¼	10½	Salt Creek Producers	(sh) 1,496,859	$10	50cQ	2- 1-30	35	24⅛	35½	27¼	35	23⅛
2½	5/16	No sales.				Savoy Oil	$750,000	$5	.....	.....	6⅞	1¼	7	1¾	3½	1
6½	1¾	500	2½	2½	2½	Venezuelan Petroleum	(sh) 755,090	$5	5cQ	11-15-29	8	4½	7⅜	4¼	9⅛	4¾
9½	2	No sales.				Woodley Petroleum	$500,000	$1	.....	.....	8¼	5½	7	4¾	8¼	4⅞
2⅞	¼	100	½	½	½	"Y" Oil & Gas (new)	(sh) 100.000	N.P.	.....	....?.	6½	6	6	1¾	8⅜	2⅛

*Including one-half per cent monthly in stock. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended December 31 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
17	11	2,600	17	16⅞	17	Anglo-American Oil (nv)	£4,192,635	£1	.36⅝	11-27-29	21	16	21⅝	17⅞	22⅜	14⅞
46½	25	300	29	29	29	Borne Scrymser	$1,000,000	$25	$1S.A.	10-15-29	76	65	69	50	56½	44½
74¼	55	300	69½	69½	69½	Buckeye Pipe Line	$10,000,000	$50	$1Q	12-14-29	59½	42	60	45	76	53
210	130	1,400	174½	153	174½	Chesebrough Mfg.	$3,000,000	$25	$1Q*	12-30-29	82½	65	126	76½	161	117
29	10	900	14	14	14	Continental Oil	$36,057,840	$10	.....	12-15-27	25⅞	17½	22⅝	16¼	23	16
75¾	40	No sales.				Cumberland Pipe Line	$1,500,000	$50	$1Q	12-15-29	137	102	137	89	114	67
70½	42	No sales.				Eureka Pipe Line	$5,000,000	$100	$1Q	11- 1-29	63¾	43	68½	47	88	64⅛
6½	3	120	4	4	4	Galena Signal Oil	$16,000,000	$100	.....	.....	32½	9⅞	13½	3½	13	4¼
128	74¼	900	84⅞	83⅞	87¾	Humble Oil & Refining	$74,103,300	$25	50cQ	1- 1-30	68½	52	68½	54	114⅜	59¼
340½	260	200	310	310	310	Illinois Pipe Line	$20,000,000	$100	$10S.A.	12-16-29	144½	125½	182	123¾	290½	176½
41	22	2,500	26¾	26½	26½	Imperial Oil Co., Ltd.	(sh) 26,421,768	N.P.	12½cQ	12- 2-29	..	..	64¾	37¾	104	56¾
41⅞	26	200	40½	40½	40½	Indiana Pipe Line	$3,000,000	$10	50cQ‡	2-15-30	72½	58	94½	61	91⅞	74⅜
30⅜	15	1,900	21¾	21½	21½	International Pet.	(sh) 14,247,088	N.P.	12½cQ	12-16-29	35½	28¾	29	28¼	55	35
25⅛	10½	100	21⅛	21⅛	21⅛	National Transit	$6,362,500	$12.50	25cQ‡	12-16-29	20¾	12½	24	13½	32⅜	19⅜
17½	10	100	16	15½	16	New York Transit	$1,000,000	$10	40cQ§	1-15-30	51½	27¼	44½	31¼	75	38½
63	41	No sales.				Northern Pipe Line	$2,000,000	$50	$2S.A.	1- 2-30	80½	64	100	70	69	56½
79¾	64⅛	200	71¼	71¼	71¼	Ohio Oil	$60,000,000	$25	50cQ‡	12-14-29	67¾	55¾	67⅞	52	84	58½
44½	20	No sales.				Penn Mex. Fuel	$10,000,000	$25	50cQ	12-14-29	24¾	15	39	12	84	28
50	29	No sales.				Solar Refining	$4,000,000	$25	$1.25S.A.	12-20-29	..	..	..	..	..	..
22½	13	No sales.				Southern Pipe Line	$1.000.000	$10	50cQ	.....	74½	61½	27¼	15½	19	15
60¼	35⅛	600	41¼	41	41	South Penn Oil (new)	$30,000,000	$25	50cQ	12-30-29	50	34½	41½	35	71⅞	36¾
70	60	No sales.				Southwest Pa. Pipe Lines	$1.750.000	$50	$1Q	10- 1-29	56	47½	83	55½	102	70
63	45	8,100	54¼	53¼	54	Standard Oil of Indiana	$348,175,069	$25	62½cQ‡	12-16-29	70½	60½	81½	64⅝	95⅞	70⅞
33¾	18	300	29	28¾	29	Standard Oil of Kansas	$8,000,000	$25	50cQ	12-16-29	36½	16½	20⅞	14⅝	37¾	15
46⅞	29	2,000	33¾	33⅛	33¾	Standard Oil of Kentucky	$25,654,516	$10	40cQ	12-16-29	134⅜	108	130	111½	179¾	122¼
50¼	40	200	44	44	44	Standard Oil of Nebraska	$4,649,225	$25	62½cQ‡	12-20-29	51⅛	42	49½	40	54⅞	39⅞
129	60	1,600	88½	81¾	88½	Standard Oil of Ohio	$14.000,000	$25	62½cQ	1- 2-30	372	288	87½	72	134	71
18	10	No sales.				Swan-Finch Co.	$861,466	$25	.....	12- 2-29	21	15	21	14½	23½	16
133¾	75	1,400	95	93½	94¼	Vacuum Oil Co.	$126,180,350	$25	$1Q	12-20-29	109⅜	90¼	..	..	111	72

*Plus 50 cents extra. ‡Plus 25 cents extra. §Plus 10 cents extra. x Ex-dividend.

WEST TEXAS FIELDS

(Continued from Page 63)

given as 54,658,000 bbls. with 38,154,439 bbls. as the present stock and the remaining 16,503,561 bbls. as present room. For the past few months, except for a few weeks, storage has been drawn from in West Texas, due to daily distribution outranking daily production, consequently the stocks have been diminishing gradually from week to week. The Howard-Glasscock Pools dropped off about 110,000 bbls. during December, and Winkler County has been declining steadily for many months. Total allowable of the Yates Field, Pecos County, is 130,000 for the period from January 1 through January 15, with the field showing a potential 5,316,494 bbls., the only field in the Permian Basin, now prorated which has shown a gain in potential production.

WEST TEXAS PRODUCTION
Week Ending January 4

County—	Wells	Bbls.
Crane County	327	34,426
Crockett County	45	1,677
Fisher County	7	1,325
Ector County	4	161
Garza County	5	45
Glasscock-Howard	456	37,469
Jones County	73	2,847
Loving County	17	971
Mitchell County	142	2,294
Pecos County	397	144,714
Reagan County	253	17,019
Runnels County	3	25
Scurry County	5	21
Upton County	245	9,438
Ward County	20	1,865
Winkler County	606	90,101
Total this week	2,605	343,820
Total last week	2,606	344,461
Difference	1	641

WEST TEXAS COMPLETIONS
Week ending January 4

Crane County

Warner-Quinlan's No. 6 University, located 2,310 feet from south and 1,650 feet west of Section 39, Block 30, topped the salt at 1,065 feet, topped the lime at 2,770 feet, topped the pay at 2,877 feet and had an initial production of 277 bbls. first 12 hours.

Fisher County

Landreth Production Corp.'s No. 2 Cooper, located 380 feet north, 330 feet east of Section 116, Block 1, was dry and abandoned at 3,270 feet. Roeser & Pendleton's No. 1 First National Bank, located Section 201, Block 1, 660 feet south and east of NW cor., was dry and abandoned at 3,160 feet.

Howard County

American Maracaibo's No. 2-C Settles, located 1,423 feet from north and 3,023 feet west of Section 6, Block 32, Township 2-S, topped the pay at 2,945 feet, was drilled to a total depth of 2,985 feet and had an initial production of 400 bbls. Continental Oil Co.'s No. 3-E Clay, located 990 feet from east and 1,650 feet from south of Section 138, Block 29, topped the pay at 1,762 feet, was drilled to a total depth of 1,795 feet and had an initial production of 50 bbls. Moody Oil Corp.'s No. 14-B Roberts, located 2,310 feet from north and 2,260 feet west of Section 137, Block 29, had an initial production of 12 bbls. at 1,307-68 feet. Moody Oil Corp.'s No. 31-B Roberts, located 2,310 feet from north and 1,700 feet west of Section 137, Block 29, had an initial production of 65 bbls. at 2,360-2,620 feet. Moody Oil Corp.'s No. 5-D Roberts, located 2,310 feet from north, 1,650 feet west of Section 136, Block 29, topped the pay at 2,945 feet, was drilled to a total depth of 2,950 feet and had an initial production of 60 bbls. 10 per cent water.

California Co.'s No. 4 Roberts, Lease No. 1, 1,650 feet from south, 2,197 feet east of Section 137, Block 29, topped the pay at 2,972 feet, was drilled to a total depth of 2,996 feet and had an initial production of 808 bbls. California Co.'s No. 9 Roberts, Lease No. 2, located 330 feet from south and east of Section 156, Block 29, topped the pay at 1,825 feet, was drilled to a total depth of 1,864 feet and had an initial production of 97 bbls.

Pecos County

Cardinal Oil Co.'s No. 1 Sun-Tippett, located 165 feet from south, 150 feet west of Section 1, J. T. Robinson Survey, was dry and abandoned at 420 feet. Cardinal Oil Co.'s No. 1 Tidal-Tippett, located 825 feet from north, 495 feet east of Section 40, Block 194, was dry and abandoned at 605 feet. Phillips' No. 4 Ramsey, located 2,722 feet from north and 1,918 feet east of Section 17, Block 194, topped the lime at 1,610 feet, topped the pay at 1,595 feet, was drilled to a total depth of 1,715 feet, plugged back to 1,697 feet and had an initial production of 330 bbls. M. M. Rowan's No. 1 Sherbino, located 990 feet west, 220 feet north of Section 52, Block C-4, was dry and abandoned at 2,497 feet. Continental Oil Co.'s No. 3-A University, topped the pay at 990-1,270 feet, was drilled to a total depth of 1,288 feet and had an initial production of 25 bbls.

Sutton County

Independent and Sun Oil Co.'s No. 1 Allison, located 200 feet from north and 1,000 feet west of Section 39, Block A, was dry and abandoned at 4,315 feet.

Reeves County

Southern Crude Oil Purchasing Co.'s No. 1 Kloh-Rumsey was dry and abandoned at 5,216 feet.

PIPE LINE RUNS
December 18 to December 25 (Inclusive)
Runs Through Trunk Lines

	Last period
Atlantic P. L. Co. to Port Arthur, Tex.	38,000
Gulf P. L. Co. to coast via Ingleside, Tex.	29,527
Humble P. L. Co. to Comyn, Tex.	44,231
Humble P. L. Co. to Ingleside, Tex.	41,455
Illinois P. L. Co. to Del Rio, Tex.	42,000
Magnolia P. L. Co. to De Leon, Tex.	12,430
Pasotex P. L. Co. to El Paso, Tex.	6,888
Shell P. L. Co. to Healdton, Okla.	38,461
Shell P. L. Co. to Houston, Tex.	21,716
The Texas Company to Houston, Tex.	25,550
Total	300,258

Tank Car Shipments

Landreth Prod. Co., Crossett	500
Reagan County Pur. Co., McCamey	1,203
Thomas & Brann, Grant City	100
Orient Co., McCamey	100
American Pet. Co., Pyote	.....
Southern Crude O. Co., Wickett	16,512
Total	18,415

Runs to West Texas Refineries

Bluebonnett Ref. Co., Wickett	5,085
Burford Ref. Co., Pecos	7,500
Col-Tex Ref. Co. Colorado	7,500
Cosden Ref. Co., Big Spring	6,500
Great Western Ref. Co., Big Spring	3,329
Humble Oil & Ref. Co., McCamey	.....
Mid-Tex Ref. Co., Midland	1,433
Tonkawa Ref. Co., Pyote	.....
Big Spring Ref. Co., Big Spring	2,588
Richardson Ref. Co., Big Spring	3,419
Wickett Ref. Co., Pyote, Tex.	208
Total	30,063

Summary

	Last period	This period
Pipe line runs through trunk lines	296,195	300,258
Tank car shipments	22,226	18,415
Runs to West Texas refineries	30,254	30,063
Total daily distribution	348,675	348,736
Total daily production	342,132	338,791
Daily average from storage	6,543	9,945

PECOS COUNTY
Week ending December 31

Company, lease—	Wells	Prod.
M. H. Black:		
Fee	1	11
California Co.:		
Yates—Lease 1	19	10,708
Smith—Lease 1, Sec. 37	5	400
Smith—Lease 1, Sec. 23	8	2,261
Smith—Lease 1, Sec. 21	5	1,032
Smith—Lease 2	3	105
Smith—Lease 3	13	3,053
Smith	2	17
Tippett—Lease 1	1	30
University	1	47
Continental Oil Co.:		
Yates-A	8	623
Salvage	..	4,331
University-A	3	194
Cosby Drilling Co.:		
Smith	2	660
Dorn & McGee:		
Pecos Valley	1	21
Grayburg Oil Co.:		
Pecos River Bed	6	375
Salvage	..	236
Gulf Prod. Co.:		
All leases	42	16,992
Henshaw Oil Co.:		
University	1	45
Humble Oil & Ref. Co.:		
Smith-A	12	1,781
Smith-B	7	1,035
Kirby Pet. Co.:		
Tippett	2	60
Kirby Pet. & Edson:		
Tippett	1	240
McCarty Oil Co.:		
Gray	1	14
Bennett	1	7
McMan Oil & Gas Co.:		
Smith-A	1	1,861
Smith-B	4	1,615
Smith-C	9	988
Tippett	3	336
Richardson	2	125
McMan & Continental:		
Yates	17	6,912
Mid-Kansas & Transcontinental:		
Yates-A	28	21,658
Yates-B	27	7,112
Salvage	..	158
Yates-C	11	8,460
Salvage	..	176
Yates-D	7	8,062
Yates-E	3	904
Yates-F	4	878
Yates-G	3	1,254
Yates-H	10	9,186
Smith	6	2,685
Smith-Taylor	19	4,439
Landreth Prod. Co.:		
University-A	3	581
University-C	3	982
University-D	3	43
University-E	1	132
University-F	2	188
University-G	3	115
University-H	1	12
Landreth & World:		
University-B	6	2,688
J. D. O'Mara:		
Butz	1	50
Pecos Valley Oil:		
Fee, Sec. 22, Blk. 26	3	79
Phillips Pet. Corp.:		
Monroe	2	175
Ramsey	4	1,131
Smith	3	660
Plymouth Pet. Corp.:		
Perry	1	40
Red Bank Oil Co.:		
Smith	5	464
Savoy Y Mazda:		
Smith	3	660
Shell Pet. Corp.:		
Tippett	11	2,996
Smith-A	11	1,461
Smith-B	1	646
Smith-D	4	786
Smith-E	1	15
University-Bower-C	4	843
Simms Oil Co.:		
Smith	7	6,872
Skelly Oil Co.:		
Tippett	2	212
Taylor-Link:		
University	11	840
World Oil Co.:		
University	1	30
Total Pecos Field	396	143,806

DAILY AVERAGE PRODUCTION BY LEASES—WINKLER COUNTY
Week ending December 31

Company, farm—	Sec.	Blk.	Wells	Prod.
Amerada Pet. Corp.:				
Cowden	3	B-12	3	28
Atlantic O. P. Co.:				
Hendricks-A	34	B- 5	8	1,582
Hendricks-B	44	26	6	612
Hendricks-C	29	B- 5	7	511
Hendricks-D	41	B- 5	5	635
Hendricks-G	46	26	1	21
Atlantic O. P. Co.:				
Hendricks-F	40	26	12	459
Bankers Prod. Co.:				
Hendricks	30	B- 5	1	....
V. T. Bolin:				
Brown-Altman	4	B- 5	1	4
California Co.:				
Hendricks	29	B- 5	7	541
Continental Oil Co.:				
Hendricks	33	26	4	508
Hendricks-A	29	26	2	62
Hendricks-B	34	26	2	1
Cranfill & Reynolds:				
Hendricks-A	28	B- 5	2	239
Hendricks-B	33	B- 5	1	66
Hendricks-C	33	26	2	398
Hendricks-E	33	26	2	146
Cranfill and Texon:				
Hutchings	47	26	2	279
Culberson Bros.:				
Hendricks	40	B- 5	1	60
Eastland Oil Co.:				
Hendricks	35	B- 5	2	281
Hendricks-B	46	26	1	134
Gulf Prod. Co.:				
Hendricks-A	34	B- 5	13	4,555
Hendricks-B	45	26	11	2,359
Hendricks-C	40	B- 5	6	436
Hendricks	44	26	3	516
Cowden	3	B-12	3	99
Humble O. & R. Co.:				
Hendricks-A	34	B- 5	17	3,998
Hendricks-B	29	B- 5	6	1,585
Hendricks-C	32	26	8	383
Hendricks-D	41	26	1	345
Hendricks-B	39	26	3	190
Hendricks-C	10	B-12	13	6,010
Walton	48	26	1	93
Independent O. & G.:				
Hendricks-A	34	B- 5	7	739
Howe-B	44	26	3	115
McCabe	36	B- 5	2	114
Vardeman-B	41	B- 5	5	239
Lion Oil Co.:				
Hendricks-A	41	B- 5	11	863
Hendricks-B	34	B- 5	13	2,358
Hendricks-C	45	26	14	3,775
Hendricks-D	44	26	1	82
Magnolia Pet. Co.:				
Hendricks	29	B- 5	8	364
May Prod. Co.:				
Hendricks	34	26	1	10
American Maracaibo:				
Hendricks-A	28	B- 5	1	25
Hendricks-B	28	B- 5	2	90
Mining & Engineering:				
Hendricks	10	B-12	1	....
Murchison & Cranfill:				
Hendricks-A	35	B- 5	2	247
Hendricks-B	35	B- 5	3	431
Hendricks-C	35	B- 5	1	....
Hendricks-H	25	B- 5	1	503
Hendricks-I	34	26	1	75
Republic Prod. Co.:				
Hendricks-A-B	45	26	12	1,005
Hendricks-C	41	B- 5	5	41
Prairie O. & G. Co.:				
Hendricks	40	26	6	856
Cowden	3	B-12	6	1,782
Shell Pet. Corp.:				
Hendricks-A	45	26	6	435
Hendricks-B	29	B- 5	6	2,182
Hendricks-C	29	B- 5	8	394
Hendricks-D	41	B- 5	6	54
Hendricks-E	40	B- 5	3	262
Hendricks-F	46	26	8	197
Hendricks-C	39	26	1	58
Shell-Texas Co.:				
Cowden-A	3	B-12	6	1,441
Hendricks	45	26	6	2,746
Hendricks-A	29	B- 5	11	646
Hendricks-B	40	26	6	111
Hendricks-C	40	26	6	1,094
Hendricks-D	40	26	6	183
Hendricks-E	39	26	4	90
Skelly Oil Co.:				
Hendricks	40	26	12	3,260
Hendricks-B	10	B-12	2	15
Hendricks-C	30	26	1	62
Southern Crude O. P. Co.:				
T-67 Hendricks-A	42	B- 5	3	85
T-67 Hendricks-3-A	4	B-12	4	330
T-67 Hendricks-B	44	26	5	315
T-67 Hendricks-3-B	33	26	4	401
T-67 Hendricks-C	33	B- 5	5	450
T-67 Hendricks-2-D	27	26	5	595
T-67 Hendricks-E	42	B- 5	4	73
T-67 Hendricks-F	33	B- 5	5	485
T-68 Hendricks-3-A	35	B- 5	2	75
T-68 Hendricks-B	46	26	2	155
T-88 Hendricks-A	44	26	6	495
T-88 Hendricks-B	4	B-12	6	124
T-88 Hendricks-C	28	B- 5	8	975
T-88 Hendricks-D	4	B-12	6	1,712
T-88 Hendricks-H	28	B- 5	6	591
T-88 Hendricks-I	20	B- 5	7	348
T-88 Hendricks-J	30	B- 5	5	438
T-88 Hendricks-K	41	26	7	868
T-88 Hendricks-L	4	B-12	4	323
T-88 Hendricks-M	35	26	33	8,807
T-88 Hendricks-N	28	26	7	2,086
T-88 Hendricks-O	22	26	4	749
T-88 Hendricks-P	28	26	2	276
T-88 Hendricks-Q	27	26	2	754
T-88 Hendricks-R	27	26	3	648
T-88 Hendricks-S	34	26	4	1,578
T-88 Hendricks-T	34	26	7	912
T-88 Hendricks-U	41	26	10	881
T-88 Hendricks-V	29	26	1	62
T-88 Hendricks-W	5	B-12	1	221
T-88 Hendricks-Cx	21	26	4	918
T-89 Hendricks-A	45	B- 5	3	284
T-89 Hendricks-B	35	B- 5	2	214
T-89 Hendricks-C	35	B- 5	3	517
T-89 Hendricks-D	35	B- 5	1	124
T-89 Hendricks-E	40	B- 5	3	77
T-89 Hendricks-F	40	B- 5	2	186
T-89 Hendricks-H	46	26	2	152
T-89 Hendricks-I	10	B-12	2	31
T-89 Hendricks-J	9	B-12	8	576
T-89 Hendricks-L	15	B-12	2	448
T-90 Hutchings	47	26	2	346
Texon Oil & Land Co.:				
Hendricks-A	41	B- 5	6	165
Hendricks-B	45	26	6	2,033
Total Hendricks Pool	575			85,923

Leck Area

Atlantic-Kesslar & Logan:				
Leck	3	74	2	85
Amerada Pet. Corp.:				
Leck	3	74	2	235
Empire Gas & Fuel Co.:				
Daugherty	3	74	3	81
Magnolia Pet. Co.:				
Scarborough	1	C-22	2	161
Gulf Prod. Co.:				
Scarborough	1	C-22	1	52
Daugherty	3	74	1	161
Shell-Llano Oil Co.:				
Daugherty	1	C-22	5	237
Shell-Danciger:				
Daugherty	3	74	2	63
Skelly Oil Co.:				
Daugherty	22	16	4	1,065
Tidal Oil Co.:				
Scarborough	1	C-22	1	64
Prairie O. & G. Co.:				
Leck	16	74	1	201
Daugherty	3	74	1	30
Scarborough	1	C-22	1	62
Warner-Quinlan:				
Leck	3	74	1	397
Total Leck Pool	27			3,254

O'Brien Pool

Continental Oil Co.:				
Morton-A	10	B-12	1	71
Morton-B	10	B-12	2	128
Wentz Oil Corp.:				
Morton	10	B-12	1	75
Simms Oil Co.:				
Sealy	50	F	1	18
Richardson et al:				
Stockton	50	F	1	....
Total O'Brien Pool			6	292
Grand total Winkler County	608			89,469

NEBRASKA GAS LINE

Oklahoma or Texas gas now may be burned in Nebraska, extension of the main gas pipe line system of Cities Service Gas Co. to Falls City, Neb., having been completed. The line serves also Horton, Hiawatha, Sabetha and other Kansas cities, where the Gas Service Co. has installed distribution systems. The extension from Atchison, Kans., is approximately 53 miles long, and is constructed of 10, 8 and 6-inch pipe. Falls City is the terminus of the line and is the point farthest north served from the Empire gas pipe lines.

Operation of the line is under the supervision of C. A. Gibson, district superintendent for the northern territory with headquarters at Ottawa, Kans., and in the immediate charge of Roy Gearhart, superintendent of Pipe Line division No. 12.

ONLY SLIGHT REDUCTION IN CRUDE RUNS

(Continued from Page 40)

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year)

Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
American Refining Properties, Wichita Falls	6,000	2,000	1,500
Archer Refining Co., Wichita Falls	2,000	700	600
Central Texas Refining Co., Angus	4,000	2,000	2,000
Central Texas Refining Co., Minerva	2,000	900	900
Continental Oil Co., Wichita Falls	6,000	3,300	4,000
Dale Oil & Refining Co., Electra	4,000	3,400	3,800
Empire Oil & Refining Co., Gainesville	5,000	3,600	3,600
Falls Refining Co., Wichita Falls	2,000	1,000	1,000
Gulf Refining Co., Fort Worth	10,000	6,000	6,000
Humble Oil & Refining Co., Breckenridge	2,000	1,250	1,250
Humble Oil & Refining Co., Chilton	4,000	2,500	2,500
Humble Oil & Refining Co., Neches	5,000	3,000	3,000
Superior Refining Co., Tiffin	2,000	(*)	(*)
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,250	1,300
LaSalle Petroleum Co., Burkburnett (Noble)	3,500	1,500	2,000
Macmillan Petroleum Co., Isom	8,000	5,000	6,500
Magnolia Petroleum Co., Fort Worth	12,000	4,800	4,700
Magnolia Petroleum Co., Corsicana	5,000	3,500	3,000
Olney Oil & Refining Co., Olney	2,000	2,000	1,500
Oriental Oil Co., (Trinity) Dallas	5,000	3,000	3,300
Orient Petroleum Co., Wichita Falls	2,500	800	1,500
Panhandle Refining Co., Wichita Falls	5,000	3,800	3,830
Pampa Refining Co., Pampa	4,000	3,500	2,700
Phillips Petroleum Co., Isom	10,000	8,000	9,000
Primrose Refining Co., Wichita Falls	2,500	2,000	1,200
Simms Oil Co., Dallas	5,000	3,400	2,400
Star Refining & Producing Co., Fort Worth	1,800	1,000	750
Tarrant Refining Co., Grand Prairie	2,500	(*)	200
Taxman Refining Co., Wichita Falls	2,500	2,000	(*)
The Texas Company, Dallas	16,000	16,000	16,000
The Texas Company, Amarillo	4,000	3,000	3,000
Tidal Western Refining Co., Burkburnett	3,000	2,000	2,000
Texas Pacific Coal & Oil Co., Fort Worth	3,000	2,000	2,000
Transcontinental Oil Co., Fort Worth	5,000	4,000	4,000
Waggoner Refining Co., Electra	3,400	2,500	2,500
White Eagle Oil & Refining Co., Fort Worth	6,000	2,000	1,500
Total	166,700	106,700	105,030

*Shut down.

REFINERY OPERATIONS IN KANSAS
(Plants which have been in operation during the past year)

Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Barnsdall Refineries, Inc., Wichita	4,000	1,500	(*)
Derby Oil Co., Wichita	6,000	3,000	4,000
Eldorado Refining Co., Eldorado	3,500	2,400	2,700
Golden Rule Refining Co., Wichita	1,500	800	800
Kanotex Refining Co., Arkansas City	10,000	3,500	4,500
Independent Oil & Gas Co., Kansas City	6,000	5,000	5,000
National Refining Co., Coffeyville	6,500	6,000	6,000
Peerless Oil Refining Co., Chanute	3,000	1,800	1,800
Shell Petroleum Corp., Arkansas City	22,000	17,000	17,000
Sinclair Refining Co., Coffeyville	10,000	10,000	10,000
Sinclair Refining Co., Argentine	9,500	7,500	6,500
Skelly Oil Co., Eldorado	23,000	10,800	10,700
Standard Oil Co. of Kansas, Neodesha	12,000	10,000	11,000
Vickers Petroleum Co., Potwin	3,500	2,000	2,300
White Eagle Oil & Refining Co., Augusta	10,000	8,000	8,000
Wilhoit Refining Co., Joplin, Mo.	1,500	(*)	(*)
Total	132,000	89,300	90,300

*Shut down.

REFINERY OPERATIONS IN WEST TEXAS
(Plants which have been in operation during the past year)

Name and address—	Daily capacity	Runs Jan. 1	Runs Dec. 1
Big Spring Refining Co., Big Spring	2,500	1,800	1,700
Bluebonnet Oil Refining Co., Wickett	5,000	2,000	2,700
Burford Oil Co., Pecos City	6,000	4,000	4,700
Central Texas Refining Co., Brownwood	2,000	700	700
Central Texas Refining Co., Luling	2,500	1,700	1,700
Col-Tex Refining Co., Colorado	10,000	6,500	7,000
Cosden Co., Inc., Big Spring	15,000	8,000	8,000
Del Rio Refining Co., Del Rio	5,000	2,000	3,500
Grayburg Oil Co., San Antonio	6,000	2,400	2,400
Great Western Refining Co., Big Spring	8,500	3,600	3,800
Gulf Oil & Refining Co., Sweetwater	5,000	5,000	5,000
Humble Oil & Refining Co., San Antonio	5,000	3,000	4,500
Humble Oil & Refining Co., McCamey	15,000	8,000	8,100
Misko Refineries, Inc., Laredo	1,500	500	500
Mid-Tex Refining Co., Midland	2,500	2,000	500
Pasotex Petroleum Co., El Paso	10,000	5,000	5,000
Pecos Valley Refining Co., Pyote	8,500	(*)	(*)
Pioneer Oil & Refining Co., Somerset	1,500	1,500	1,500
Richardson Refining Co., Big Spring	6,000	4,000	4,000
Rio Grande Oil Co., El Paso	6,000	3,000	3,000
San Angelo Refining Co., San Angelo	2,000	500	400
Sweetwater Oil & Refining Co., Sweetwater	2,000	250	250
The Texas Company, San Antonio	3,000	2,500	2,500
The Texas Company, El Paso	1,500	1,000	1,000
Tonkawa Petroleum Co., Pyote	5,000	600	1,900
Texas Mexican Oil & Refining Co., Laredo	1,000	200	200
Texas Petroleum Products Co., Somerset	1,500	800	800
Wickett Refining Co., Wickett	2,500	160	300
Total	142,000	70,710	75,650

*Shut down.

FOUR VAN POOL TESTS DRILLING; CORE DRILLING IN ANDERSON COUNTY

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 6.—The past 24 hours' gauges on the four Van Pool wells in Van Zandt County were as follows: Pure Oil Co.'s No. 1 Jarman, 815 bbls. through two three-sixty-fourths-inch choke; No. 1 Thompson, 1,027 bbls. through seven-sixteenths-inch choke; No. 1-A Tunnell, 1,052 bbls. through seven-sixteenths-inch choke and No. 2-A Tunnell, 1,032 bbls. through seven-sixteenths-inch choke. The latter two wells are owned by the Shell Petroleum Corp. and have previously been on nine-sixteenths-inch choke producing approximately 1,800 bbls. per day.

The four locations on which the Pure Oil Co. was rigging up rotaries last week are now in the process of drilling, the deepest one down 800 feet. This is Pure Oil Co.'s No. 1 R. L. Wells in the M. Gross Survey. This well was first reported as being 1½ miles west of the discovery, but is located on a 41½-acre tract one-half mile southwest of the Jarman well. One other test is located to the north, and the other two to the east and southeast of the four producers in the field.

The Central Oil Co. is still shut down on its No. 1 West in the Ben Wheeler district. Total depth of the test is 200 feet. McElmurry and others' No. 1 Peel in the S. T. Meeks Survey, 8 miles southeast of Canton in Van Zandt County, is now rigging up rotary for the test, and probably will be spudded next week. Thornton and Taubert's No. 1 Everette, 4½ miles southeast of Canton, set 225 feet of 10-inch surface casing, and is shut down at that depth. Moore and Reid's No. 1 Robinson, 4 miles east of Grand Saline, is rigging up a rotary. This test will be known as the Van Zandt Oil & Development Co.'s well.

In Anderson County

In Anderson County the Shell Petroleum Corp. and Humble Oil & Refining Co. continue to core drill. The former company has opened district offices at Tyler with A. L. Fulton in charge. Mr. Fulton has been working in this district for the past three years. Ben R. Rogers, A. C. Wright and Frank Evans will be connected with the land and geological departments working in this office. This makes the fifth major company to open offices at Tyler. The Mid-Kansas Oil & Gas Co., Sun Oil Co., Humble Oil & Refining Co. and Gulf Production Co. all have offices here.

The Mid-Kansas Oil & Gas Co. which has been doing considerable core drilling in Rusk and Cherokee Counties is now building a derrick for its first core test on its block in Smith County. The test will probably be drilled on the George B. Jones 85-acre tract in the Brimbarry Survey. The East Texas Oil Corp. is still shut down at 1,160 feet in blue shale on its No. 1 Kadane in the McFadden Survey.

Frank Foster and others' (Deep Rock Oil Co.) No. 1 Bowdoin is shut down at 91 feet for clearing titles. This test is also in Smith County. R. H. Davis' No. 1 Starnes, 3½ miles northeast of Starrville, is drilling at 485 feet in sandy shale; 153 feet of casing has been set in this well.

In Cherokee County the Mid-Kansas Oil & Gas Co. is working on its second core test on the Tom Roark farm.

The Magnolia Petroleum Co. has made a location for its No. 2 Williams, approximately 3,400 feet north of No. 1 which was abandoned at 3,920 feet in the Pecan Gap chalk, which was topped at 3,840 feet. This test is in Anderson County.

Production

Daily average production during the past week follows:

Boggy Creek	3,329
Cedar Creek	55
Currie	389
Hill County	38
Mexia	4,710
Minerva	560
Nigger Creek	270
Powell	6,736
Richland	329
Thrall	36
Van	6,155
Wortham	925
Total	23,499
Week ending December 28	23,317
Increase	182

TUBULAR GOODS PRICES HOLDING VERY RIGIDLY

By B. E. V. Luty

PITTSBURGH, Pa., Jan. 6.—Operation of the tubular goods industry in the past two weeks has averaged not over 30 to 40 per cent according to such esstimates as can be made, there being no particular difference between pipe and tube mills. The operation has been very irregular, for on the one hand there have been some rush orders to get out promptly, while on the other hand mills have taken the opportunity to rebuild some furnaces and make other repairs.

Specifications and orders for shipment in the latter part of December were particularly light, in this general dull spell, as all buyers wished to have inventory as low as possible. That is the attitude every year, but this time the paring of inventory was particularly rigid.

In the late days of the old year specifications underwent a little increase and prospects are both pipe and tube production will increase during January, making the month better than December.

There is not much distinction in demand for the different descriptions of tubular goods, all lines being relatively light. Standard pipe, chiefly butt weld, and oil country seamless are perhaps doing the best, and boiler tubes are fair.

Prices of tubular goods have been holding very rigidly to date and sellers see no particular reason why they should not continue on this basis as no permanent advantage could accrue to mills or jobbers through cutting prices.

In some other finished steel products the price situation has been far less satisfactory. Automobile sheets have dropped $2 a ton, being now at 3.90 cents. For a long time there was practically no buying, or no buying of size sufficient to tempt a seller to cut. Apparently as soon as a little business did develop several producers quoted 3.90 cents instead of 4 cents and the lower figure promptly became the market.

Blue annealed sheets have been steady until quite recently on widths beyond those in which hot rolled strips are competitive, and on those widths the market was simply the strip market, $2 to $4 a ton below the regular blue annealed market. In the last 10 days shading on regular widths developed in the East and spread elsewhere, 2.10 cents being not uncommon. Mills are endeavoring to maintain the old 2.20-cent price, but generally meet a 2.10-cent price when they encounter it, making the market 2.10 cents to 2.20 cents instead of flat 2.20 cents, with prospects that it will soon be flat 2.10 cents.

More spectacular than the declines in sheets just noted is the outright cut of $2 a ton in tin plate formally announced by the American Sheet & Tin Plate Co. (Steel Corp.), from $5.35 per base box, 100 pounds, to $5.25. Price had been announced and books opened November 15 for the new season, which means the first half of the year with ordinary manufacturing consumers, but practically eight months with the makers of packers' cans. After the major part of the business has been signed up, with no particular cutting except on the Pacific Coast, some cutting in other territory developed and the leading interest promptly met the situation. Its action may be taken as notice that if there is additional cutting there will be another reduction, which should certainly act as a deterrent.

Steel production in December was at 50 to 60 per cent of capacity and January, with an upturn, may be forecast at around 60 to 65 per cent. Mills entered the new year with a good volume of business in connection with rails, structural material and freight car material, and a steady running demand from the farm implement works, all other lines being poor buyers. The latter will gradually buy more, in a seasonal way. The automobile season will open more slowly than usual and no one expects production to come at all close to that of early 1929. If it comes close to early 1928, it will do as well as most of the steel producers expect.

W. A. GREEN DEAD

HOUSTON, Tex., Jan. 6.—William A. Green, 75, of 606 Avondale, retired oil executive, died Saturday in a local hospital. Mr. Green was formerly treasurer of The Texas Company and had been retired for six years.

Before taking a position with The Texas Company in 1911 Mr. Green was affiliated with the John W. Gates interests. His first position with The Texas Company was that of comptroller. He was elected treasurer in 1913 and remained in that capacity until his retirement in 1924.

OKLAHOMA CITY FIELD IS ONE OF GREAT PROMISE

(Continued from Page 38)

1 Olds, in Section 24-11-3w, north and west of the discovery well. Production in the sand zone has extended to the north, south and west, and some believe it may encircle the field. It has yielded wells with as high an initial production as 32,000 bbls. and has shown no water to date. This important feature causes many to express an opinion that the sand wells will compare in longevity to wells in the Seminole area.

Gas Pressure and Salt Water

The gas pressure of wells, with water encroachment producing from the Arbuckle lime has declined over half since completion. The gas pressure of wells producing from the Detrital sand has not shown any decline.

The following is a list of wells that are showing water together with the production of oil and water on December 24. All these wells are producing from the Arbuckle lime and are scattered in all parts of the field.

Company, Lease—	Water (bbls.)	Oil (bbls.)
Coline, No. 2 Warren	500	25,517
I. T. I. O., No. 1 B. Anderson	352	3,293
I. T. I. O., No. 2 A. Bodine	50	2,459
I. T. I. O., No. 1 S. Bodine	1,043	(*)
I. T. I. O., No. 2 S. Bodine	10	345
I. T. I. O., No. 2 Button	552	13,839
I. T. I. O., No. 2 E. Joyce	623	339
I. T. I. O., No. 1 Fortson	1,463	16,160
I. T. I. O., No. 1 Foster	1,943	700
I. T. I. O., No. 1 Henning	2,313	914
I. T. I. O., No. 1 fee	943	457
I. T. I. O., No. 1 T. Fuzzell	9,920	25,000
I. T. I. O., No. 1 Trosper	1,206	6,500
Mid-Kansas, No. 1 Browning	1,500	8,000
Mid-Kansas, No. 1 Fortson	73	737
Mid-Kansas, No. 2 Fortson	100	1,000
Mid-Kansas, No. 3 Fortson	1,890	3,550
Shell, No. 5 Petty	100	150
Shell, No. 6 Petty	500	4,950
Sinclair, No. 1 Stamper	4,000	300
Sinclair, No. 2 Stamper	100	440
Sinclair, No. 5 Stamper	560	340
Sinclair, No. 6 Stamper	1,335	1,750
Slick, No. 1 Glidden	3,000	5,500
Slick, No. 2 Glidden	1,000	1,400
Total	35,076	123,700

Some estimate the water production now at 50,000 bbls. daily. It is increasing and the disposal of it is a serious problem.

CRUDE SITUATION IN THE PERMIAN BASIN

(Continued from Page 38)

this period showing greater production than distribution.

Yates Field

Of course, this is taking into consideration that the Yates Field is prorated, and could reverse this situation at once if opened up, but since the period covering from January 1 to January 15, 1930, only allows a total of 130,000 bbls. production per day, while the total potential based on 12-hour figures show 2,658,247 bbls., we can readily see how proration affects daily production in the Permian basin.

This potential and allowable production is figured on production from 347 wells covering 182 units, and the field having innumerable locations yet to be drilled. There has been but little drilling in this phenomenal pool during the past six months, and perhaps there will be but few more wells drilled in the next six months due to co-operation of the companies operating in the field in holding down drilling and curtailing production to a minimum. There are four main pipe lines serving this field, the Shell Pipe Line Co., the Illinois Pipe Line Co., Humble Pipe Line Co. and Gulf Pipe Line Co., the latter running only its own oil, while the other three lines serve the field in a general way, serving the rest of the producers. Unlike the proration units of the Winkler County Field, the Yates Field units contain 100 acres each.

Water encroachment has affected the Yates Field but to a minor extent, only 58 wells, most of them being on the southeastern and northwestern side, making an appreciable amount and affecting oil production, whereas in the Winkler Pool there are but few wells out of the total of 562 which are not making any water. Continuance of proration in the Winkler Pool prevents the flooding of the wells with water, but prevention of the encroachment of water in the Yates Pool is not the main reason for proration of this pool.

Taylor-Link Area

There have been five other producing areas opened to production in Pecos County, one of them soon dropping off production after the well had produced a little over 5,000 bbls., but none of the other four pools has yet proved to be of major importance, and of sufficient consequence to merit possible proration. The largest of these pools, the Taylor-Link Pool, discovered in June, 1929, is producing around 7,000 bbls. daily, the Landreth Production Co.'s 8-inch line to Crossett and Humble Pipe Line Co.'s 6-inch line to McCamey serving the pool, and running practically the daily total production at present. As the pool now appears it seems unlikely it will reach such production proportions as to call for proration of the wells and pipe line runs.

Other areas which have been opened in West Texas in 1929 have not reached the proration stage, and none of them has the appearance of a major pool at present, although the new pool discovered by the Penn Oil Co. and Humble Oil & Refining Co. in Ector County may later attain the point where proration will be called into play. The operators in this pool have already shown their desire for curtailing development below the danger point, and it is believed this pool will be slowly drilled, keeping it well in hand, and allowing no chance of it reaching such proportions as to call for thousands of barrels of steel storage. One small line is serving the discovery, the Gulf Pipe Line Co. having laid this connection from its 10-inch line running from Monahans to Midland.

Andrews County

Andrews County may become a threat in 1930 as the discovery well in Section 6, Block A-46, has the possibility of opening another field of some proportions. It is yet doubtful just what the outcome of this area will be as the well has been standing shut down for several weeks producing around 140 bbls. daily from 4,428 feet. As this well is considerable distance from pipe line facilities or any railroad, and major companies own the majority of the acreage surrounding the well, this area will also probably be slowly drilled, unless the University Lands to the north are sold in sufficient quantities to many operators who might in turn drill on their respective holdings and force the drilling of offsets and bring about chaos in the matter of drilling. As the University Board of Regents is asking one-sixth royalty on oil and $1 rentals for the acreage which is to be sold in this area January 21, it is quite generally believed bids will be withheld by majority of the companies who are against the new royalty schedule. It has heretofore been only one-eighth royalty on oil, and the rentals running 25 to 50 cents per acrea.

Ward County Pools

Ward County has several small pools to its credit, none of which is of major importance at this writing, but if deeper drilling opens further production in the Shipley Pool, as is apparently the case in the Shell Petroleum Corp.'s No. 1 Owens in the Shipley Pool, deeper horizons in this area and county may bring to light a pool of major importance during 1930, and proration may be resorted to in such a pool. But wherever such a pool is opened in the Permian basin it can readily be believed the operators and companies producing in the pool will do as they have in the past in the West Texas district and plan methods of proration as soon as needed. West Texas producers have rightfully earned praise for the manner in which they have co-operated in proration movements, and they will no doubt gain further respect by handling knotty situations as they are presented in the following year or years.

Van District

The pendulum of oil interest has momentarily swung from West Texas to the Van area in east central Texas due to the discovery of the Pure Oil Co. in that district, and, as with West Texas, the operators in this pool co-operated immediately, met and planned a method of curtailing drilling operations to a minimum and consequently are holding down production in this new pool to but a small amount of its potential. The four producing wells are on small chokes. Tremendous prices were paid for two pieces of acreage in the pool which threatened failure to the plans laid for curtailing developments, but the companies interested were ready to meet the situation and remove the "fly in the ointment," thereby saving the immediate drilling of many offset wells and opening the pool to an orgy of drilling. At present, several months after the discovery was made, there are only four wells producing and four more spudding in the pool, much different than it might have been if strategic moves had not been made to forestall impending doom to the plans perfected for curtailment.

Present Storage

Present storage in West Texas follows:

	Capacity (bbls.)
Crane County	9,347,000
Crockett	55,000
Howard	1,748,000
Midland	11,350,000
Mitchell	515,000
Pecos	1,533,000
Reeves	265,000
Reagan	3,443,000
Val Verde (Mid-Kansas Oil & G. Co.)	2,000,000
Upton	5,239,000
Ward	6,342,000
Winkler	12,821,000

The tank farm of the Mid-Kansas Oil & Gas Co., east of Del Rio in Val Verde County, was erected to accommodate Pecos County crude transported by the Illinois Pipe Line Co.'s 8-inch from the field. This line is extended from the tank farm to the Humble Pipe Line Co.'s main station at Lytle in Atascosa County, where the Humble company takes over the oil and runs it to Corpus Christi.

Gray County in the Panhandle recently prorated the main pools in the county to 20 per cent of their production. The Waggoner pasture in Wilbarger County in the Wichita Falls district is under proration, the Humble Pipe Line Co. and Sinclair Pipe Line Co. having prorated their runs 50 per cent. The Darst Creek area in Guadalupe County is also under proration, making every flush production area in Texas now under some proration plan, helping to make Texas the most prorated State in the oil industry.

OIL SHARES BELIEVED READY FOR RISE

(Continued from Page 135)

Gas Co. the right to exchange each two shares of Houston Gulf company held for one share of United Gas common stock. United Gas Co. is the holder of 64 per cent of Houston Gulf Gas Co. common stock.

Stock offered for exchange may be deposited with the Chatham Phenix National Bank & Trust Co. not later than January 10, 1930. The United Gas Co. reserves the option to accept for exchange or to return to depositors by February 1 any stock deposited after January 10 and up to January 20, 1930. United Gas common stock to be issued in exchange for Houston Gulf common stock is expected to be ready for delivery by February 1, 1930.

The Houston Gulf Gas Co. has outstanding 490,845 shares of no par common stock in addition to $1,000,000 of 7 per cent preferred stock, Series A, and $1,500,000 of 7 per cent preferred stock, Series B. Before giving effect to the exchange, United Gas Co. has outstanding 1,592,736 no par shares of common stock and 100,000 shares (no par) of $7 Series A preferred stock.

Galena Signal Oil

Galena Signal Oil Co. stockholders voted to dissolve the company and transfer the remaining operating property to Galena Signal Oil Corp., as provided for in plan of reorganization. Latter company will carry on business of Galena Signal Oil Co. without interruption.

Middle States

Middle States Petroleum Co., which will emerge from the reorganization of Middle States Oil Corp., is expected to begin operations shortly. Articles of incorporation will be filed shortly in Dover, Del., following which application for listing of the new company's securities on the New York Stock Exchange will be made. It is believed that all members of the reorganization committee will be on the board.

FUNERAL SERVICES ARE HELD FOR MR. LAMBING

Funeral services for John A. Lambing, pioneer operator in the oil fields of Pennsylvania, were held Thursday, January 2, in St. Philip's Church, Crafton, Pa., a suburb of Pittsburgh. Solemn high

John A. Lambing

mass of requiem was celebrated. Mr. Lambing, who was in his eighty-seventh year, died Monday of last week in the home of his daughter, Mrs. Raymond M. Smith, Crafton. He was widely known by oil and gas men in the eastern and Mid-Continent fields.

DRILLS THREE WELLS FROM SAME DERRICK

HOUSTON, Tex., Jan. 6.—Gulf Coast operators frequently drill two wells from the same derrick floor location but now Rio Bravo Oil Co. expects to have three wells without having skidded derrick or rig. In drilling No. 86 Cotton at Saratoga, Hardin County, to a sand at 1,118 feet, it passed up two shallower sands. No. 86-A then was drilled from the same floor to a sand at 558 feet and No. 86-B being put down to a sand around 350 feet. It was intended to pump the three at the same time but the second hole was completed as a flowing well for 50 bbls. The first hole is waiting the completion of the third before going on the pump.

JAMES B. STEELE DEAD

Another of the old guard of oil men has passed away. James B. Steele, who operated in the Bradford Field in Pennsylvania from 1879 until he disposed of his holdings to enter other fields of business, died at his home in Bradford on Saturday, December 4. Mr. Steele was a prominent trader on the Bradford oil exchange from 1879 until its close in the early '90s. He and associates bought the exchange building when the institution closed its doors, and later sold it to the First National Bank & Trust Co. Mrs. Steele and one daughter survive him.

Preparing Well for a Pressure Well

Two General Methods of Distributing Compressed Gas to Pressure Wells. Determining Capacity of Repressuring Plant

Prepared by R. H. Pence for the Bessemer Gas Engine Co.*

In preparing the well for a pressure well, it should be thoroughly cleaned of all debris that might plug the pores of the sand face. If the water shutoff is effective and the casing is in good condition the gas may be introduced directly into the casinghead, providing no sand is exposed having a less resistance than the oil bearing sand. Any open hole below the oil sand should be plugged back to prevent migration. If the casing is defective, then for test purposes, a string of tubing can be run with a packer set as near the top of the sand as possible. After the test this packer can be removed and another permanent string of pipe run to carry the gas to the sand. This string of pipe may be any size advisable for the particular installation and varies from 1 to 4 inches. It is packed or cemented off at the top of the sand. One method of packing, adopted in many cases, is to wrap sufficient burlap around a short joint of pipe, which has a left-hand thread at the top, until it nearly fills the casing. The burlap is made fast to the bottom of the joint and slit at the top to form a flare. The pipe is lowered into the hole slightly below where it is to set and then pulled back to the setting point, and a thin mixture of sand and cement is poured slowly down onto the burlap forming a bridge between the pipe and the well. If it is desired to remove the packing, the pipe may be unscrewed at the left-hand thread and the plug drilled out. Not much difficulty has been thus experienced.

Some operators prefer to run a string inside the pressure string for the purpose of flowing any fluid out of the hole by the gas lift that may have accumulated during a shut down of that well. This is probably a good idea where the well made considerable oil or water at the time repressuring was established.

At times it has been found advisable to drill new wells on a property where the old wells have not been located advantageously. The new well may be used for pressure or a producer. It is often found that a newly drilled well gives much better results as a pressure well than one of the old producers.

Distribution of Gas

There are two general methods of distributing the compressed gas to the pressure wells. The oldest method is to run a main line through the lease with laterals running from this to the individual wells. This serves the purpose admirably and has a low initial first cost. The other method is to distribute the compressed gas direct from the plant to the individual well through small lines. The latter method is gaining favor rapidly as it allows close check and easy adjustment of the flow to each well. In the former method the mains range in size from 2, 4 and 6-inch depending on the volume or area served. The laterals are usually 1 to 2-inch in size. In the latter method the individual lines vary from 1 to 2-inch, depending on the volume and length of the line.

Whatever the compressed medium, natural gas, air, etc., it should be aftercooled to remove moisture content or gasoline, so as to prevent such condensing in the field lines. Drips should be placed advantageously as a precaution but after cooling is the only safe practice, especially where freezing weather is encountered.

After-coolers vary vastly according to the service imposed and the result desired. Where air is used in small volumes an atmosphere cooler consisting of a multitube header is often used; and, under the same conditions, a 6 or 8-inch line 100 or 200 feet in length often serves the same purpose. Bleeds are placed at the low end in either case.

Where gas is used the after-cooler may be of the same type, or of the water-cooled type, but with an accumulator in connection so as to conserve the natural gasoline knocked down in the process. In view of this matter, the plant may be operated as a gasoline plant in connection with the pressure system if it is so chosen by carrying pressures and temperatures adapted to the gas handled.

Measurement to Pressure Wells

It has not been considered advisable to install self registering meters on the pressure wells because of the cost involved and the accuracy desired. But it is highly desirable to know the approximate volumes going to each well, so as to conserve the gas and to gain maximum results from it. A simple method universally used is the installation of an orifice in the individual well line and measuring the differential and static across this orifice.

In the main line system of distribution, as formerly described, the orifice may be installed on the lateral line, at or near the main, or at the well. In the header system of distribution from the plant, the orifice is placed in the well line just after it leaves the header, as shown in the illustration. In this latter system, control and proportional distribution is before the operators' eyes and any changes made on any well may be immediately noticed on the remaining wells. Changing the volume going to any one well in the main-line system is done without knowing the reaction of the other wells, and it is often necessary to make a round of the entire leases to readjust the proportions on the wells. Therefore, the header system is much the preferable from the point of control. In either case, connections are made on each side of the orifice for attaching the manometer and provision made for a gate or stopcock to control the differential across the orifice plate. A pressure gauge should also be affixed to the downstream side of the orifice. If the differential becomes too high, a larger orifice should be installed. Measurements of the gas from the producers can be made in the same manner, if the flow is fairly constant.

Capacity of Repressuring Plant

The size of the plant necessary for a given property is usually determined by means of a testing machine with which the selected pressure wells are tested to find the pressure necessary to force differing volumes of gas into the sand. In all cases, when testing, the capacity of the casing in that well must be taken into consideration unless the test is continued over an extended period of time.

When the pressure-volume curve for each pressure well is at hand, the volume necessary to be forced into each of the pressure wells to adequately serve the surrounding producers can be calculated. The sum of these volumes and the pressure necessary will indicate the necessary capacity of the compressor plant. It is a hard matter to determine the volume necessary for each producing well as this depends both upon the amount of fluid it will produce and the extent that the sand has been depleted of its gas. Gas-oil ratios may run from 500 cubic feet to 2,000 cubic feet per barrel and more, according to operating conditions. However, experience has shown that for each producing well 5,000 cubic feet to 20,000 cubic feet of free gas per day should be forced into the sand. Available data indicates from one to four horsepower for each producer.

The fluid from the producing wells may be lifted by means of the pump and rod or by the intermittent gas-air lift. In the former method no alterations in the pumping equipment need be made on the lease being repressured, and the production may be taken care of in the usual manner. The gas is collected at the casinghead and gathered in the existing system. Many installations are operated thus although the cost per barrel of fluid lifted in many cases is undoubtedly greater than if the fluid had been produced on the lift.

A property may be repressured and the oil lifted from the wells all from the same power plant. It is the normal procedure on repressured properties to change over from the rods to the lift after sufficient time has elapsed to prove the adaptability of the repressuring process. The lift offers nearly trouble-free production and eliminates the constant pulling and cleaning out of the producers. In some cases on repressuring jobs, where the rods have been abandoned for intermittent lift, no enlargement of the compressor plant has been made. A check valve has been installed on each line to the pressure wells and the compressed gas alternately diverted to blow the producing wells and immediately put back to its former work. This may or may not be the best of practice. However, the installation of more compressor capacity would correct any mal practice.

Back Pressure on Producing Wells

Back pressure will in many cases diminish the volume of gas produced coincident with the oil. It retards or prevents the tendency of the gas to establish channels in the sand from the pressure well to the producer and thus "by-pass" or pass around the tighter sand and do little useful work in its transit.

It has been demonstrated that the drop in pressure due to the resistance of gas and liquids passing through sand is not directly proportional to the distance traveled. The greatest drop in pressure occurs a short distance back from the face of the sand, near the point of discharge. Therefore, a high differential pressure between the well and a few feet back in the sand will not promote production of oil any more than a lower differential. Hence, the particular differential pressure best suited to the individual well will allow production and, at the same time, permit a minimum of gas to accompany the fluid which in turn will minimize bypassing of gas through the sand.

An interesting experiment in the extraction of oil from sand by means of compressed gas has shown that higher pressures promote a greater flow of oil with the same differential pressure, or that with higher pressures the same amount of oil is extracted with a lower differential. This can probably be explained by attributing the ease of flow to the action of the compressed gas on the oil.

Holding back pressure on the well retards the influx of sand, muck, etc., as well as the additional benefits. The quickest way to determine the best adapted differential is to experiment with the amount of back pressure, keeping accurate records of gas and oil produced. By means of trial-and-error fine results may be obtained and adjustments can be made from time to time throughout the life of the property.

Back pressure may be held on the sand by either pinching in the gas at the casinghead or by allowing the fluid level to rise in the well. In the former method a pressure regulator will serve the purpose nicely and this is a very good arrangement in pumping wells. In the latter method a flood nipple may be used in pumping wells so as to permit the water to be withdrawn from the bottom of the hole; as the fluid level falls during pumping, a small port in the tail piece, so placed as to establish the minimum level desired, is uncovered and the seal will be broken and no more fluid will be pumped. Both methods of back pressure may be used in connection with lift. A back pressure may be carried on the separator, or the eductor may be placed off bottom at the desired point.

Success in Repressuring

"If an oil man is looking for a field in which to study the effect of repressuring with compressed air or gas, no better can be found than the Bradford, Pa., Field, if he be an eastern operator, or the Nowata-Rogers Field in northeastern Oklahoma if he be a Mid-Continent oil man. The Associated Producers (Tide Water Oil Co.) and the Petroleum Reclamation Co., operating in the Bradford Field, are in a position to aid or advise anyone interested in the subject; while in the Nowata-Rogers Field the Tidal Oil Co., Wiser Oil Co., Sinclair Oil Co., and others which have had two or more years of experience with repressuring have some interesting data of their experiences, both good and otherwise.

"The repressuring method is in use in Pennsylvania, Ohio, West Virginia, Illinois, North Texas, Oklahoma and Kansas, always in old fields where the gas is almost exhausted, and where wells have fallen off to a fraction of a barrel per day. Prompted by the belief that only 15 to 25 per cent of the oil can be removed from the sands by nature itself, the oil man seeks to recover a part at least of the remaining 75 to 85 per cent. A core recently taken in Nowata County, is said to have indicated a per acre content of 5,000 bbls. left in the sand which has been producing over 20 years.

"This article will be mainly devoted to the experience of the Wiser Oil Co., one of the oldest oil companies in the Oklahoma Field. E. A. Durham of Sistersville, W. Va., is president of the company. H. Guy Ellis of Bartlesville, Okla., is the manager of the company's Mid-Continent operations, which extend also to Kansas and Texas. Fellow oil men say of Mr. Ellis that he can squeeze more oil out of an old well than most men, but there came a time when even his ability as a handler of old production reached its limit on some wells and he turned to repressuring to extract as much as possible of what was left.

"The Wiser Oil Co. may be said to have had signal success with[1] its air-gas installations. It is operating 11 repressuring plants in Nowata, Rogers, Osage, Washington and Creek Counties in Oklahoma, and Chautauqua and Montgomery Counties in Kansas. Four of the plants were installed too recently to have had results. On the properties affected by the remaining seven plants the company has seen its production increase from 280 bbls. per day to 832 bbls., an average increase of about 197 per cent. The increases vary from 15 per cent to 389 per cent.

"Somewhere between 20 and 22 years ago a certain well was drilled in Section 29-25-17, Nowata County. For the past 90 days that well has been producing 25 bbls. per day. A little more than eight months ago it was producing one-quarter of a barrel per day. Repressuring is the cause of this well yielding 100 times as much oil as it did less than a year ago. It is the Wiser Oil Co.'s No. 8 Hohman Purchase.

One Freak Producer

"But this well is a freak. Repressuring has had no such effect on other wells

*This is the eleventh of a series of articles on air and gas lift. The first article of the series was published in the April 18 issue of The Oil and Gas Journal; the second, May 2; the third, May 30; the fourth, July 11; the fifth, August 15; the sixth, August 22; the seventh, September 12; the eighth, September 26; the ninth November 14, 1929; and the tenth, January 2, 1930.

[1]James McIntyre, The Oil and Gas Journal, 10-20-27.

in that territory, but some notable increases in production have come as a result of the installation of air or gas. The Wiser Oil Co., Tidal Oil Co., Sinclair Oil & Gas Co., Delaware Consolidated Oil Co., George Woodard, Phillips & Milam and Harmon and others, are among those which have profited with increased production by the use of compressed air; but there are so many oil wells in the old Bartlesville sand shallow district, 8,899 in Nowata County, and 4,299 wells in Rogers County, that the total number of wells included in the repressuring activities forms only a small part of the whole. The Wiser Oil Co. is the largest user of compressed air in the Nowata-Rogers Field. It has put the air to 150 intake wells which are forcing the compressed air to 1,210 oil wells, and on October 1, 1927, it was showing increases of from 77 to 389 per cent in production in less than two years.

Not Always Successful.

"The experience of the Wiser Oil Co. is characteristic of the success of repressuring in the Nowata-Rogers Fields, wherever the sand conditions were favorable and the equipment properly installed. The use of compressed air has not worked out advantageously in all parts of the field. Although it is all Bartlesville sand territory, there are parts of the field where the sand is comparatively soft and where it takes the air easily; while in others the sand appears to be almost impenetrable, even under prohibitively high pressure of air, and there has been no increase in production of oil as a result of its application or no sign of the air in the oil wells. Air installations meet with different conditions which require their own peculiar handling. Altogether about 1,000,000 cubic feet of air and gas per day is used. There are 568 oil wells in the group affected by this Alluwe plant.

"Pressure was first applied in December, 1925, when the wells were producing 122 bbls. per day, or a shade less than one-fifth barrel per well per day, for the 635 wells on the property. Sixty-seven of the wells on the property were made pressure wells. The following month the wells began to show an increase which gained steadily and by the following March, or three months after the pressure was exerted, the production increased about 100 per cent. Now, after 21 months the production has increased to 428 bbls. a day, 250 per cent over its natural production. This gives the 568 oil wells an average production of .74 bbl. per day. It is one of this group of wells that is producing 25 bbls. per day or about 34 times as much as the average well in the group.

"The Mehlin plant, in Section 20-25-17, Nowata County, is not connected to as many wells as the Alluwe plant, but it has produced a greater percentage of oil increase. With 28 air wells and 288 oil wells the property has increased to 205 bbls. a day from 61 bbls., an increase of 389 per cent in less than two years.

"The Bartlesville sand in that part of the country in which the Alluwe and Mehlin plants are situated lies at about 400 feet in depth and has a thickness of about 20 feet.

Successful Operators

"George E. Woodard, of Nowata, one of the leading individual producers in the Nowata-Rogers Field, has experienced at least three notable production increases on the leases to which he has put the air in Nowata County. In June, 1927, he applied compressed air to two intake wells on a lease of 11 wells which had been producing 3.84 bbls. per day. In two months the nine oil wells produced an average of 20.22 bbls. per day. Another lease of eight wells which had produced 4.78 bbls. per day produced 13.49 bbls. per day from seven oil wells, one having been made an intake well. Another lease of five wells which made 1 bbl. a day was increased to 6.42 bbls. per day when air was applied. Mr. Woodard has air plants on other leases, however, where the increase was small and one property which has not been affected at all, even under very high pressure. The air is going through, but he does not know where, as none of his neighbors have been benefited by it.

"The Sinclair Oil & Gas Co.'s Bratcher lease, in Section 25-21-17, one of the earliest of the air leases in the Nowata district, increased from 20 bbls. a day to more than 80 bbls. a day, but it has declined to about 49 bbls. a day. The pressure was started over two years ago.

"Harmon and others are reported to have had signal success in most of their repressuring operations, and much has already been written about the success of the Tidal Oil Co., which was among the pioneers in applying pressure and which had remarkably good results with it in the Lenapah district, in the northern part of the county.

Making Wells Flow

"The Delaware Consolidated Oil Co., which is made up of a number of companies and firms that own leases in the Nowata Field and that pooled them for the purpose of more economical and efficient operation under the repressuring system, has six compression plants operating at present between 450 and 500 oil wells in the Delaware Pool (Township 25-17), where the Bartlesville sand lies at about 1,200 feet in depth. I. L. Dunn of the Dunn-Lewis Oil Recovery Co., who is in active charge of this big property, while claiming it had proved successful in increasing the production of the properties affected, would not give figures showing total percentage increase. Mr. Dunn's ambition is to see the whole property put on a flowing basis. Most of the wells are yet on the pump, but a considerable number of them have been equipped so that they will flow twice a week. One well in particular flows twice a week under a 130-pound back pressure. It was good for one-half barrel a day before the pressure was applied. Now it yields 20 bbls. a week through a small orifice, which is below its actual producing capacity. The Delaware Consolidated Oil Co. uses both air and gas in its repressuring operations. It has had a greatly increased gas recovery which it makes use of in its repressuring."

TO CONSIDER UNITIZATION

The unitization committee of the Mid-Continent Oil & Gas Association will hold its first meeting at association headquarters in Tulsa on January 22 for the purpose of organization, the election of a chairman, outlining a unitization program and naming subcommittees. Members of the unitization committee are: C. C. Herndon, Skelly Oil Co.; Dana H. Kelsey, Prairie Oil & Gas Co.; James A. Veasey, Carter Oil Co.; J. Edgar Pew, Sun Oil Co.; Edward T. Moore, Simms Oil Co.; D. J. Moran, Continental Oil Co.; R. F. MacArthur, Barnsdall Oil Co.; H. R. Straight, Empire Companies; B. H. Stephens, Magnolia Petroleum Co.; John R. Suman, Humble Oil & Refining Co.; E. R. Filley, The Texas Company; T. J. Donoghue, The Texas Company; P. N. Wiggins, Jr., Peerless Oil & Gas Co.; Paul S. Ache, Reiter-Foster Oil Co.; James A. Green, Shell Petroleum Corp.; Burdette Blue, Indian Territory Illuminating Oil Co.; George D. Foster, Devonian Oil Co.; C. Plummer, Pure Oil Co.; J. S. Bridwell, Wichita Falls; J. D. Collett, Fort Worth; J. R. Penn, Fort Worth; J. F. Lucey, Dallas; T. B. Hoffer, Hoffer Oil Corp., Fort Worth; Frank Cullinan, Republic Production Co.; W. B. Hamilton, Wichita Falls; E. H. Blum, Atlantic Oil Producing Co.

GEOPHYSICAL RADIO PERMITS

WASHINGTON, D. C., Jan. 6.—The Federal Radio Commission in executive session has granted all of the 10 applications for construction permits filed by the Wireless Service Corp. of New York City. Automatically this action cancels the hearings that were to be held in behalf of these applications during the present week. The Gulf Production Co. has on file an application for a radio construction permit and a hearing will be granted to that company.

The Wireless Service Corp. desires to use the new stations in connection with geophysical prospecting for oil in the Gulf Coastal regions.

RESPONSIBILITY FOR CONSERVATION LIES WITH INDUSTRY, WILBUR SAYS

By Ray Lyman Wilbur
Secretary of the Interior*

Conservation of the nation's remaining mineral resources presents a problem in administration of the public domain second only to the conservation of water.

Petroleum is our fastest-dwindling irreplaceable asset. It is acknowledged that there is considerable preventable waste in the handling of our oil supplies. This is due to the waste of gas and oil, the use of gasoline-containing crude oils in other than gasoline engines, the large amounts left in the ground because of badly managed attacks upon the pools, and wastage from evaporation due to expensive storage aboveground.

It is also acknowledged that there is a limited supply of oil available. Estimates vary but those most expert in the field expect our present volume of production to last for less than a decade. This situation, in view of the proportionately small known petroleum areas still controlled by the United States, presents squarely to the Government the problem of wise use of this remaining supply.

Primarily, the responsibility for the prevention of waste lies with the industry and with the governments of the states. That problem is far from solution.

The position of the Federal Government is not to interfere with the rights and duties of the local state governments but to lend such aid as it can and to participate in the solution of the problems. Voluntary co-operation in the industry and wise exercise of the police power by the states must be the basis for conservation.

Until the present day of wasteful overproduction is over the potential supply in the public domain must be safeguarded. With that need in view, the issuance of prospecting permits has ceased and extensions of existing permits have been granted only upon a showing of equities.

Unsound exploitation of the public domain under oil prospecting permits has, in some cases, been shocking. Although the law allows two years within which very moderate drilling requirements may be met, and provides for extensions thereafter up to a possible total of nine years, an examination of the outstanding permits, occasioned by the President's conservation order, has so far disclosed that, up to November 15, 10,995 of these permits required cancellation for lack of diligence out of approximately 20,300 outstanding.

They have been largely held for speculative purposes and some have been used as a basis of blue-sky operations. The ratio of these frozen permits to the total outstanding has amounted to about 50 per cent, representing prima facie noncompliance with the law to that extent.

No permit which has been regarded as sufficiently valuable by its holder to justify compliance with the law has been affected by this order. The total area of active permits will probably not exceed 10,000,000 acres upon which genuine development is now in progress, as against 40,000,000 acres covered by permits before this housecleaning was undertaken.

The public domain is being rapidly cleared of these abuses. A method of review has been provided whereby all alleged equities under permits are considered by a departmental committee.

Up to November 15, 1,512 cases had come before the committee and 1,282 of these had received favorable action. There are several thousand similar cases under review, awaiting decision.

Very careful consideration will continue to be given to equities, particularly legitimate development and reliable geological investigations. That the cessation of issuance of prospecting permits has no immediate prospect of injuring the oil industry of any of the states affected is apparent when it is considered that in the seven major public land oil States of Wyoming, Utah, Idaho, Colorado, Montana, New Mexico, and California, the number of wells completed to production on public lands in all of 1928 and the first half of 1929 amounted to 249, whereas on March 12, 1929, the date of the conservation order, there were shut-in wells in those States totaling 4,115.

The great disproportion of these figures is occasioned by the situation in California where new wells on the public lands for the year and a half ending July 1, totaled 71 wells, whereas the shut-in wells on all the lands of the State on March 12 totaled 3,560. But shut-in wells outnumbered new public land wells in every one of these States except New Mexico.

In the absence of a need for production from new wells, as evidenced by these figures, further exploitation of the public domain at the present time means overproduction and consequent further wastage of an irreplaceable resource.

*In the United States Daily.

DUBBS CRACKING UNITS INSTALLED DURING 1929

Seventeen Dubbs cracking units were completed and put in operation during 1929 by the Universal Oil Products Co. Seven of these were in foreign countries and the remaining 10 were in the United States.

The Shell interests built the largest number, having installed two at East Chicago, two at Arkansas City, and four at New Orleans. This makes a total of eight in operation at the East Chicago plant, ten at Arkansas City and eight at New Orleans.

The White Star Refining Co. at Detroit put two in operation, the Wilcox Oil & Gas Co., one, and the Independent Oil & Gas Co., one. The British-American Oil Co. at Toronto installed one, making a total of two in operation there.

The foreign installations comprised one unit for the Societa Anonima, Benzina Italiana and two at Astra Romana, Rumania, making a total of four, and one in Belgium by the Belgium Cracking Co. and two for the Societa Per l'Industria Italiana del Petroli.

LINE FROM VAN FIELD

WOODVILLE, Tyler County, Tex., Jan. 4.—The surveying crew of the Pure Oil Co. is locating a pipe line through Tyler County, a portion of the company's line from the new oil field at Van in Van Zandt County to Nederland, Jefferson County. It is understood the line will cross the Neches River north of Corrigan and pass within 3 or 4 miles of Woodville and that a pumping station probably will be located on Mill Creek south of town.

The Pure Oil Co. recently completed a short pipe line from the Van oil area in Van Zandt County to Chandler on the Cotton Belt Railway, where the oil is being loaded on tank cars and shipped to the company's refinery at Smith's Bluff, Tex. It is supposed the new survey is being made with the view of having pipe line transportation for the oil all the way from the Van Field to the refinery near the Gulf Coast.

OPENS DETROIT OFFICE

CHICAGO, Jan. 4.—The Atlas Petroleum Co., of this city, is opening a Detroit office for the sale of all petroleum products. The office will be under the management of Ben J. Skinner who has been the company's representative with headquarters at Kalamazoo. Mr. Skinner was formerly the representative of the Marland Refining Co., having opened the Chicago office for that organization some years ago.

AVERAGE NET GASOLINE TANK WAGON PRICES CONTINUE SLOW DECLINE

The average net tank wagon price of 15.45 cents on January 1 marks another step in the gradual lowering of prices in The Oil and Gas Journal's 50 cities. This average is lower than at any time since May 1 but is above the average for the first half of 1929. Compared to a year ago, the January 1 average of this year is under that of a year ago by approximately one-half cent.

The history of prices in 1929 has been one covering a relatively narrow margin of fluctuation. Starting at a peak of 16 cents on January 1, 1929, the average slowly weakened until it struck the low point for the year of 14.9 cents on April 1. Prices strengthened for the next two months and were given a big boost on May 18 when the 1-cent advance in the tank wagon and station prices throughout the Standard Oil Co. of Indiana was posted. This was followed by similar advances in other sections of the country. These advances led to the establishing of the peak average for the year on July 1 at 16.02 cents. Following this there has been slight changes from month to month, which pushed the average up and down over a small margin but the general trend has been downward.

Gasoline Tax

The average tax in the 50 cities shows another small advance for January 1 as a result of the increase in the Oregon tax from 3 cents to 4 cents effective on that date. During the year, 21 states increased their taxes and brought the average from 3.07 as the year opened to 3.73 cents when the year closed.

Extensive future tax increases may be sought by many states because of the higher taxes in neighboring states and because of the ease with which it may be collected. At the present rate of 3.73 cents per gallon the annual gasoline tax bill amounts to more than $500,000,000 and is becoming such an item that those in favor of higher taxes point to its effectiveness in raising money while those appreciative of the rapid rate of the gasoline tax advance point to the figure to show that it has already reached a dangerously high mark.

TANK WAGON PRICES EXCLUSIVE OF TAX IN 50 REPRESENTATIVE CITIES

	Dec. 1	December price changes	Jan. 1	1928 High	1928 Low	1927 High	1927 Low	Tax Jan. 1 1929
Birmingham, Ala.	13.0	....	13.0	18.0	14.0	18.0	14.0	4.0
Phoenix, Ariz.	14.0	....	14.0	18.0	14.0	19.0	16.0	4.0
Little Rock, Ark.	14 0	21 13.0	13.0	16 0	11 0	15.0	11 0	5.0
San Francisco, Calif.	17.0	....	17.0	14.0	14.0	14.0	9.0	3.0
Denver, Colo.	14.0	....	14.0	16.0	13.0	18.0	13.0	4.0
Hartford, Conn.	16.0	....	16.0	18.0	16.0	22.0	18.0	2.0
Dover, Del.	15.0	....	15.0	18.0	16.0	19.0	16.0	3.0
Jacksonville, Fla.	16.0	....	16.0	18.0	13.0	16.0	10.0	6.0
Atlanta, Ga.	12.0	....	12.0	18.0	13.0	18.0	10.0	6.0
Boise, Idaho	19 5	....	19 5	20 5	19.5	22 5	19.5	4 0
Peoria, Ill.	16.2	....	16.2	15.2	9.0	18.2	9.0	3.0
Chicago, Ill.	14.0	....	14.0	15.0	14.0	17.0	14.0	3.0
Indianapolis, Ind.	16.2	....	16.2	15.2	10.2	18.2	10.2	4.0
Des Moines, Iowa	16.5	....	16.5	15.5	11.9	16.0	9.9	3.0
Wichita, Kans.	14.8	....	14.8	13.8	10.8	15.8	10.8	3.0
Louisville, Ky.	16.0	....	16.0	16.0	13.0	17.0	13.0	5.0
New Orleans, La.	10.0	....	10.0	14.5	10.5	14.5	11.5	*5.0
Augusta, Me.	16.0	....	16.0	18.0	17.0	22.0	17.0	4.0
Baltimore, Md.	15.0	....	15.0	16.0	15.0	19.0	16.0	4.0
Springfield, Mass.	16.0	....	16.0	18.0	16.0	22.0	12.0	2.0
Detroit, Mich.	16.8	....	16.8	15.8	11.8	18.8	11.8	3.0
Duluth, Minn.	17.5	....	17.5	16.5	12.5	19.5	12.5	3.0
Natchez, Miss.	15.5	....	15.5	16.5	12.5	15.5	12.5	5.0
Kansas City, Mo.	15.9	....	15.9	14.9	10.9	17.9	10.9	*3.0
Helena, Mont.	20 5	....	20 5	20.5	19 5	22.0	19 5	5 0
Omaha, Nebr.	16.25	....	16.25	15.25	13.25	15.25	12.25	4.0
Reno, Nev.	20.0	....	20.0	18.0	18.0	18.0	15.0	4.0
Newark, N. J.	15.0	....	15.0	16.0	15.0	19.0	16.0	2.0
Albuquerque, N. M.	15.0	....	15.0	17.0	14.0	20.0	16.0	5.0
New York, N. Y.	14.0	....	14.0	18.0	17.0	22.0	17.0	2.0
Charlotte, N. C.	14 0	10 12.0	12 0	17 0	15 0	18.0	16 0	5.0
Fargo, N. Dak.	18.9	....	18.9	17.0	12.0	20.0	12.0	3.0
Cleveland, Ohio	15 0	8 14 0	14.0	16 0	14 0	19 0	14.0	4 0
Tulsa, Okla.	11.0	....	11.0	14.0	10.0	15.0	10.0	4.0
Portland, Ore.	17.5	....	17.5	14.5	14.5	14.5	11.0	4.0
Philadelphia, Pa.	15.0	....	15.0	18.0	15.0	19.0	12.0	†4.0
Providence, R. I.	16 0	....	16 0	19.0	17.0	22 0	17 0	2.0
Charleston, S. C.	15.0	....	15.0	17.0	15.0	19.0	15.0	6.0
Huron, S. Dak.	17.3	....	17.3	16.3	14.5	19.5	11.5	4.0
Memphis, Tenn.	15 0	11 13 0	13.0	16 0	12.0	15 0	10 0	5 0
Dallas, Tex.	13.0	....	13.0	14.0	9.0	13.0	10.0	4.0
Salt Lake City, Utah	17.5	....	17.5	18.5	16.5	20.5	16.5	3.5
Burlington, Vt.	15.0	....	15.0	18.0	17.0	22.0	17.0	4.0
Norfolk, Va.	15.0	....	15.0	16.0	14.0	18.0	16.0	5.0
Washington, D. C.	15.0	....	15.0	16.0	15.0	19.0	16.0	2.0
Charleston, W. Va.	15.0	....	15.0	17.0	15.0	18.0	16.0	4.0
Milwaukee, Wis.	16.1	....	16.1	15.1	13.1	18.1	13.1	2.0
Casper, Wyo.	16.0	18 15 0	15.0	16.0	14 0	18.0	14 0	4.0
Seattle, Wash.	17.5	....	17.5	14.5	14.5	14.5	11.0	3.0
Minneapolis, Minn.	17.2	....	17.2	16.2	11.0	15.2	11.1	2.0
Average price	15.59	....	15.45	16 54	13.54	18.15	13.55	3.73

*Includes 1-cent city tax. †Paid by dealer.

AVERAGE TANK WAGON PRICES IN 50 CITIES

(Exclusive of Tax)

December 1, 1927	14.21
January 1, 1928	14.29
February 1	14.33
March 1	14.71
April 1	14.81
May 1	15.02
June 1	15.22
July 1	15.29
August 1	15.74
September 1	16.04
October 1	16.34
November 1	16.28
December 1	15.98
January 1, 1929	16.00
February 1	15.11
March 1	14.73
April 1	14.90
May 1	14.94
June 1	15.80
July 1	16.02
August 1	15.82
September 1	15.74
October 1	16.00
November 1	15.82
December 1	15.59
January 1, 1930	15.45

MARKET FOR MACHINERY IN WESTERN CANADA

CHATHAM, Ontario, Jan. 4.—C. E. Brookhart, United States Trade Commissioner at Winnipeg, Manitoba, in a recent report deals as follows with oil and gas development in western Canada:

"The main market for drilling machinery, equipment and supplies is so far confined to the Turner Valley Field, but a certain number of wells are being drilled or projected at other points in Alberta and some in Saskatchewan. The great bulk of the machinery and equipment used comes from the United States, but three important companies having branches in or near Calgary and one local firm in Calgary have gone into the business of supplying machinery and equipment.

"After a flow of wet gas is secured from one of the wells in Turner Valley it is transmitted through a so-called separator or scrubbing plant which means the naphtha or oil is extracted. The remaining gas is then available for fuel purposes and a pipe line supplies the city of Calgary with gas for fuel purposes from this source. All of the necessary power at the wells and throughout the Turner Valley area is also obtained by using the gas wherever possible.

"Under present production conditions there is a tremendous surplus of gas still available after all of these means of consumption have been utilized. The surplus or waste is simply piped off in the field and burns continuously in large jets or flames throughout the field. This waste gas which is burned at the present time is estimated with more or less authority at 100,000,000 feet per day.

"Both the Dominion and provincial governments as well as the private companies are very much interested in securing some means of utilizing the tremendous waste either through commercial use of the gas or development of by-products. Any such development is still entirely experimental but it includes such by-products as carbon black, sulphur, or sulphur compounds, certain other chemicals and a process for further cracking the gas to obtain additional gasoline."

STRUCTURE OF TYPICAL AMERICAN OIL FIELDS

The American Association of Petroleum Geologists have just distributed Volume II of Structure of Typical American Oil Fields, which together with Volume I issued early in 1929 completes a review of the various papers presented before the Tulsa meeting of the association held March 24, 25 and 26, 1927, and contains in all about 70 special papers descriptive of the principal oil and gas producing areas of this country.

Volume II contains papers upon the following fields:

Arkansas: Stephens. California: Santa Maria, Ventura Avenue, Elk Hills, Long Beach. Colorado: Florence, Northwestern. Illinois: Centralia, Sandoval, Martinsville. Kansas: Virgil, Madison, Eldorado. Louisiana: Caddo, Homer, Bellevue. Montana: Kevin-Sunburst. New York: Cattaraugus, Allegany, and Steuben Counties. Oklahoma: Hewitt, Cromwell, Seminole, Delaware extension, Depew, Cushing. Pennsylvania: Bradford, Scenery Hill. Texas: West Columbia, Stephens County, Yates, Big Lake, Petrolia, Smith-Ellis. West Virginia: Griffithsville, Tanner Creek, Granny Creek. Wyoming: Elk Basin, Salt Creek, Lance Creek, Rock Creek, Grass Creek, Lost Soldier.

The work has been done by the association with funds provided for this purpose at the New York meeting in 1926 and 45 authors, each familiar with his particular field have contributed. This makes these two volumes indispensable for the library of all interested in the production of oil and the last paper in Volume II is by F. G. Clapp, "Role of Geologic Structure in the Accumulation of Petroleum."

Volume II contains 750 pages with 235 illustrations, and can be procured from the American Association of Petroleum Geologists, Box 1852, Tulsa, Okla., for $6 postpaid for nonmembers of the association. To A.A.P.G. members the price is $4 and for public libraries and educational institutions $4.80. The work is recommended to the geology departments of colleges and universities.

TWO NEW PRODUCTS

CHICAGO, Jan. 4.—The Commerce Petroleum Co., of this city with offices at 2129 Lock St., announces that it will add two new products to its line in the immediate future. The first of these is known as "Petro-Benzol" which is used as a substitute for pure benzol by the rubber and chemical industry. The other product is known as "prolyoil" and is used in the manufacture of lacquers. These products are from the refineries of the Anderson-Prichard Oil Corp., of Oklahoma City, Okla.

The Commerce Petroleum Co. has acted as distributors of the naphthas refined by the Anderson-Prichard corporation for some time. A laboratory is to be installed to handle the technical and sales problems. It will be under the direction of Dr. J. K. Stewart of the Oklahoma office. The Commerce Petroleum Co. is now installing its fifth bulk plant at 3316 North Kedsie Avenue, Chicago. It has a capacity of 300,000 gallons and is already in service.

HONOR HENRY H. BRIGHAM

CHICAGO, Jan. 7.—All trains on the North Shore division of the Chicago & Northwestern Railway stopped at Glencoe this afternoon as a tribute to Henry H. Brigham, president of the North American Car Corp., who began his business career as a telegraph operator with this road. Funeral services were held at Glencoe this afternoon. Mr. Brigham died suddenly in New York, Saturday.

Late Fields

(Continued from Page 46)

lime, the top being at 6,044 feet, and the total depth 6,520 feet. The other test finding oil was the Cromwell-Franklin's No. 11 Trosper, in the SE cor., Section 12-11-3w. It had Arbuckle lime from 6,127-6,500 feet, and made 312 bbls. the first hour, and later made 3,857 bbls. in nine and one-half hours. The gauges by companies and leases for January 7, were as follows:

Company, lease—	Bbls.
Coline, No. 1 Olds	4,649
Coline, No. 3 Olds	10,780
Cromwell, No. 1 Trosper	3,107
Cromwell, No. 11 Trosper	3,857
I.T.I.O., No. 1 B. Anderson	2,862
I.T.I.O., No. 1 Button	1,211
I.T.I.O., No. 2 Button	11,990
I.T.I.O., No. 1 Canfield	11,317
I.T.I.O., No. 1 Fuzzell	15,031
I.T.I.O., No. 3 Jennings	12,325
I.T.I.O., No. 1 Peterson	1,054
I.T.I.O., No. 2 Trosper	12,386
I.T.I.O., No. 1 Verne	231
Mid-Kansas, No. 1 Fortson	630
Mid-Kansas, No. 3 Fortson	7,106
Prairie, No. 1 Hiddleston	6,745
Shell, No. 1 Petty	8,219
Slick, No. 1 Glidden	6,840
W. Franklin, No. 2 Lowery	12,035
Total	132,375

Two of the wildcats in the area are drilling and the other is shut down. Tom Slick Oil Co.'s No. 1 Martin, NW cor., Section 13-13-1w, Oklahoma County, was drilling on cement at 6,675 feet, the total depth being 6,964 feet. Magnolia Petroleum Co.'s No. 1 Noble, in Section 30-12-2w, was drilling deeper at 6,955 feet with nothing showing. The deepest test in the area was shut down. It was the Prairie Oil & Gas Co. and others' No. 1 Sudick, C NE NE, Section 8-10-2w, Cleveland County, which had water in the Wilcox sand at 7,716-20 feet.

In the Seminole area, Prairie Oil & Gas Co.'s No. 1 Davis, in Section 32-7-4, Pottawatomie County, a wildcat, found water in the Wilcox sand at a total depth of 4,296 feet, and was plugged back to 4,292 feet and swabbed 65 bbls. of oil in eight hours.

One of the largest wells completed in the East Earlsboro Pool is the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Fullerton, in Section 19-9-6. It made 8,915 bbls. on the air lift from the Wilcox sand at 4,155-80 feet. Gypsy Oil Co.'s No. 4 Noble, in Section 18-9-6, made 1,297 bbls. from the Wilcox sand at 4,275-4,300 feet.

In the Sasakwa Pool, Prairie Oil & Gas Co.'s No. 1 Harjo, NE cor. SW NE, Section 25-6-7, found water in the Wilcox sand at 4,272-76 feet.

The production of the entire East Earlsboro Pool, January 7, at 7 a. m. was 68,069 bbls. from 99 wells.

The total production of the East Little River Pool January 7, at 7 a. m. was 21,109 bbls. from 54 wells.

The wildcat test of the Magnolia Petroleum Co., No. 1 Young, NE cor. NW NW, Section 22-21-1w, Noble County, made 399 bbls. swabbing, the 24 hours ending at 7 a. m., January 7. It is producing from the Misener sand at 5,401-04 feet.

The new pool near Konawa, Seminole County, made a total of 3,207 bbls. It was opened by E. L. Harris and others' No. 1 Harjoche, in Section 8-6-6. This well made 398 bbls. and No. 2 Harjoche, in the same section, made 1,729 bbls. the 24 hours ending at 7 a. m., January 7. Empire Oil & Refining Co.'s No. 1 in Section 9-6-6, made 1,080 bbls. the same day. McCulloch Oil Co.'s No. 1, in Section 8-6-6, has been shut in for 15,000,000 feet of gas at a total depth of 2,850 feet. Independent Oil & Gas Co.'s No. 1 in Section 8-6-6, was drilling at 2,895 feet, January 7, with nothing showing.

EAST CENTRAL TEXAS

FORT WORTH, Tex., Jan. 7.—In East Central Texas, Pure Oil Co.'s No. 1 Wells is drilling blue shale below 1,508 feet. It cored hard lime shells from 1,530-40 feet showing oil and gas. Shell Petroleum Corp.'s No. 1 Fowler is drilling sand rock at 325 feet. The Texas Company's No. 1 Tunnell is drilling shale below 1,250 feet. It cored from 1,134-45 feet in shale and from 1,214-33 feet in gray sandy shale with no showings found in either corings. Pure Oil Co.'s No. 1 Magers, north of the discovery, set 10-inch casing at 293 feet. All of these wells are in the Van Pool, Van Zandt County, and are all being drilled by the Pure Oil Co. under the unit development plan.

NATURAL GASOLINE QUOTATIONS LOWER

(Continued from Page 34)

point to the trend toward greater volatility in the domestic grades of refinery gasoline. This is true not only of the premium products but also the ordinary grades. Many of the large distributors and independent jobbers are giving their customers a gasoline at regular prices which a few years ago would have been considered a premium product so far as distillation range is concerned. While many refiners can secure more volatile motor fuels through their cracking operations it is certain that others will find it cheaper to supply this volatility with natural gasoline. The increasing sale of Ethyl Gasoline which at one time was thought to be a menace to the natural gasoline industry has in fact widened the market for the product. The demand for Ethyl Gasoline in the United States and Canada totaled approximately 1,200,000,000 gallons in 1929, and it is estimated there will be at least a 50 per cent increase in 1930.

Government Report

The Bureau of Mines report for November so far as it applies to crude oil runs to stills at Mid-Continent refineries and gasoline production is concerned is summarized in the accompanying table. The same data for October, 1929, and November, 1928, are also shown.

This summary reflects a situation which has been generally known for some time. Crude runs to stills in November were 15,000 bbls. a day less than in October. The actual production of gasoline was only 2,000 bbls. a day less. Compared to November, 1928, the crude runs to stills in November, 1929, were 4.2 per cent greater and the gasoline production 10.4 per cent greater. Stocks on November 30, 1929, were 30.5 per cent greater than on the same date last year.

As has been the case all year there was not an exceptionally large increase in crude oil runs to stills or gasoline production in November when compared to the same date in 1928. In an equitable adjustment of refinery operations throughout the United States, the Mid-Continent would be entitled to this increase in their plant operations to take care of normal increase in demand for gasoline. Unfortunately, however, some of the other refinery groups who are more favorably located as to market outlets have greatly increased their operations and have evaded the market territory of the Mid-Continent refiners. This accounts for the 4,684,000 bbls. of gasoline on hand November 30.

There is still agitation for a general curtailment of refinery runs to prevent a too rapid accumulation of gasoline inventories during the next 90 days. The regular monthly survey of The Oil and Gas Journal covering Mid-Continent refinery operations as of January 1, shows runs are on practically the same basis as December 1.

Gasoline and Naphtha

Although U. S. Motor gasoline seems to be fairly well pegged at a low of 6 cents some of the refiners who have been quoting higher prices have reduced their quotations. The weighted average price as of Monday which is representative of the high of the market was under 7 cents. Some of the larger refiners who have reduced their prices to 6½ and 6¾ cents report a fair business. While they were quoting 7 and 7¼ cents they had practically no spot orders.

The 400 endpoint grade which was relatively strong after the U. S. Motor weakened in the fall months has also been under pressure. An occasional sale of this grade at 6½ cents is reported with plenty of material available at 6¾ cents. The low on the 390 endpoint grade for domestic shipment appeared to be 7⅜ cents with 375 endpoint quoted at a price of 7¾ to 8 cents. The 390 endpoint grade is bringing 7½ cents and the 375, 7¾ cents basis North Texas in the export movement of Oklahoma refiners.

Kerosene and Distillate

Kerosene prices have not changed. The spread on the 41-43 water white grade is 4⅛ to 4½ cents with an occasional sale at 4 cents. The demand since the first of the year appears to have improved slightly. Less distress material is being thrown on the market.

Some of the larger refiners who are obtaining 4½ cents for kerosene state that they will not reduce their price further. They believe that the domestic demand will continue to improve with a large spring consumption in prospect. It is also believed that some additional export buying will develop.

Distillates are weak and prices on all grades are at least one-eighth cent lower. This weakness as has been previously explained is apparently due to an oversupply, a development of the weak kerosent market resulting in increased yields of the distillate cuts. A 38-40 straw color furnace oil of low cold test sold as low as 3⅝ cents in Oklahoma the first of the week. Prices on this grade ranged up to 4 cents.

Fuel Oil and Gas Oil

Fuel oils are bringing a wide range in prices. The market continues tight and little attention is paid to gravity if other specifications are satisfactory. There are many distributors of furnace oils who prefer a low cold test gas oil or high gravity fuel oil and the demand is active for these grades. By blending the high gravity fuel oils with a small quantity of distillate the refiner can furnish a product with a flash of from 200 to 225° F. and this gives satisfactory operation in many of the oil burners. The same situation applies to the straw color, low cold test gas oils which are in demand at a price range of 3 to 3⅜ cents.

An occasional sale of fuel oil and gas oil at prices below the accepted market is reported but these sales are the exception. Most of the refiners have already sold all the fuel oil they will have for January delivery. Some are still making deliveries on December orders. The demand is coming from all classes of buyers. One large seller states that the industrial demand has improved in the Chicago area since the first of the year due to a resumption of operation at plants.

Lubricants and Wax

The weakness in neutral oils which first became apparent last week continues. Although the larger manufacturers in Oklahoma have not yet met the competition of low priced material from Middle Western refiners it is reported that at least two of the smaller refiners have reduced their prices. It is feared that a general reduction will be necessary.

There is an undertone of weakness in bright stocks. Some of the manufacturers are sold up for January and most of the Oklahoma output is covered in contracts which extend over long periods. The spot demand, however, is not active. Prices on petroleum wax are nominal as very little business is being placed.

URUGUAY TO FAVOR NON-GASOLINE TRUCKS

The Uruguayan Government has approved a project of law to permit the introduction into the country, duty free, of tractors and truck chassis utilizing for their motors gas produced by burning wood or charcoal. The motors of such vehicles must be adapted especially for the use of low pressure gas produced from charcoal or wood, and it must be impossible to use naphtha or other petroleum derivatives for their functioning. It is contemplated to pay a premium for every motor of a truck, tractor or other automobile which is transformed so as to use this kind of gas obtained from charcoal or wood, and the premiums run as high as 300 pesos (one peso equals approximately 97 cents United States currency) per machine. It is planned to appropriate a certain sum from general revenues for these premiums, the annual amount of which will probably be 20,000 pesos.

This is a further effort on the part of the Government to reduce gasoline consumption in the country, substituting locally made fuel for the imported gasoline. It is the general impression, however, that the result will not warrant the effort. It is unlikely many owners of automobiles will be tempted to adapt their machines to the use of a gas produced from charcoal, as they question the final economic results.

A movement has been started to urge the Government to expend 40,000 pesos ($41,368 United States currency at par) for the purchase of trucks and tractors of this kind, destined for the use of the ministry of industries, to be employed in the transportation of products of the live stock industry. It is claimed by the advocates of this movement that trucks operated by gas obtained from charcoal can be run for one-quarter of the expense of gasoline trucks. If this purchase is made and the trucks prove economical and satisfactory, it may give some impetus to similar purchases by private interests.

WORKING ON REAGAN LINE

The Reagan County Crude Oil Purchasing Co., controlled by the Continental Oil Co. is working on the 7-mile 6-inch line from its Big Lake pump station to its Kempner tank farm, Reagan County. The line parallels an old 7-inch line that will be junked because of corrosion damage. The latter handles all crude produced in the Big Lake Field to Kempner station, where the oil is delivered on contract to Humble Pipe Line Co. for the account of the Humble Oil & Refining Co.

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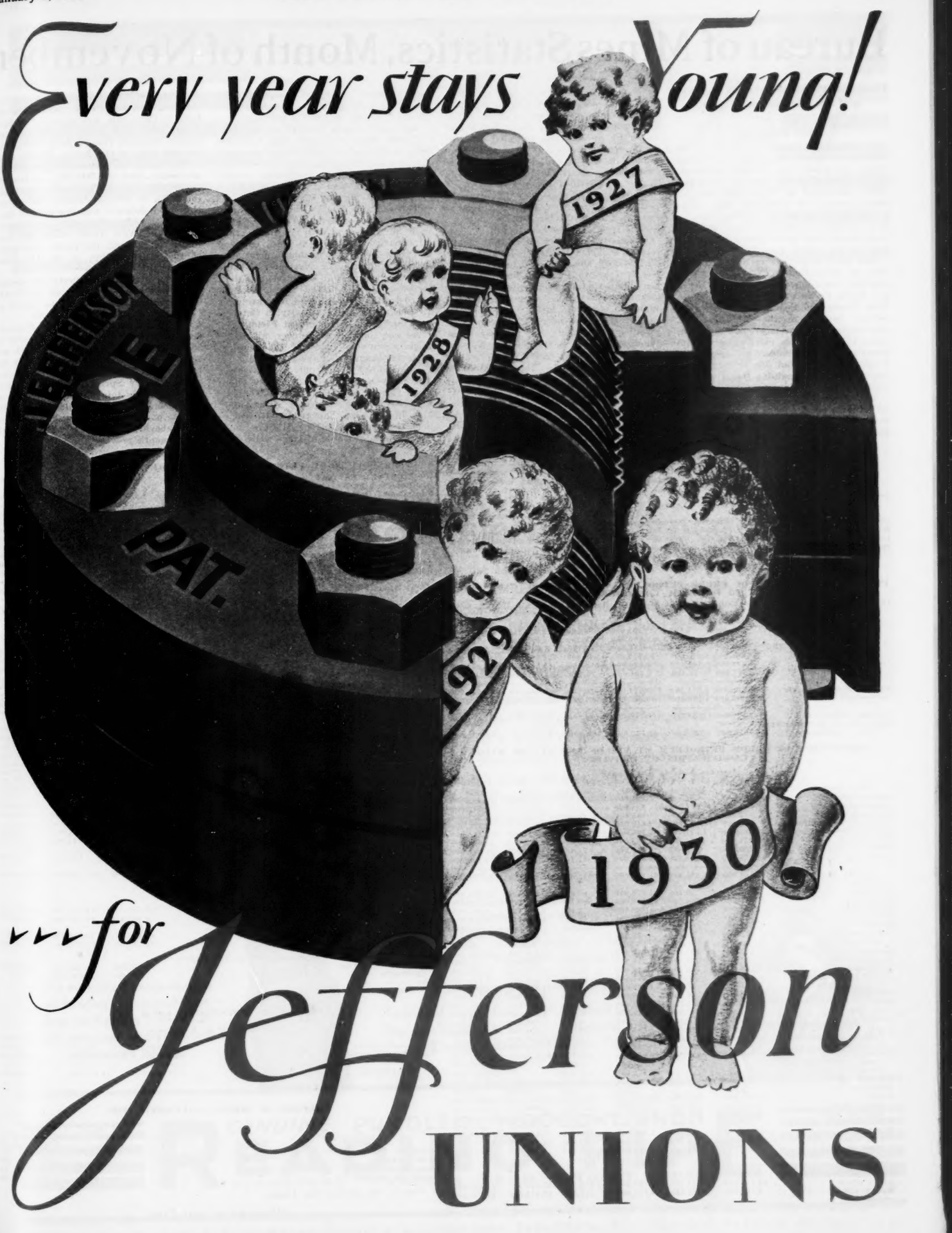
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1927
1928
1929
1930
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Bureau of Mines Statistics, Month of November

Petroleum, Petroleum Products and Natural Gasoline, November, 1929

Crude Petroleum

According to reports received by the Bureau of Mines, Department of Commerce, the production of crude petroleum in the United States during November, 1929, amounted to 78,161,000 bbls., a daily average of 2,605,000 bbls. This represents a decline of 237,000 bbls. in daily average production from the previous month and is the lowest production rate for any month since December, 1928.

The most important factor in the decline in production in November was a material curtailment at the Long Beach and Santa Fe Springs, California, Fields. West Texas and Seminole, the most important factors in the Mid-Continent, also declined in November, but the Oklahoma City Pool, the chief center of interest at present, recorded an increase in November. With but one or two exceptions, all of the remaining states and districts declined in output in November.

The material decline in production was reflected in crude stocks east of California which decreased from 384,502,000 bbls. on November 1 to 380,393,000 bbls. on November 30. This decline of 4,109,000 bbls. was the largest withdrawal from these stocks since August, 1925. The drop in output at Long Beach and Santa Fe Springs was reflected in California crude stocks, both light and heavy grades in that State declining for the first time in many months.

Refined Products

Daily average runs to stills of crude petroleum at refineries during November amounted to 2,702,000 bbls., a material decline from the previous month.

Gasoline production for the month totaled 37,350,000 bbls., a daily average of 1,245,000 bbls., as compared with the record figure of 1,279,000 bbls. in October. Imports of gasoline were 984,000 bbls., exports and shipments totaled 4,094,000 bbls., the latter a material decline from the previous month. Stocks of gasoline continued to increase and amounted to 37,780,000 bbls. on November 30 as compared with 35,042,000 bbls. on hand November 1. The indicated domestic demand for gasoline totaled 31,502,000 bbls., a daily average of 1,050,000 bbls., which is but slightly below the October average of 1,059,000 bbls. At the current rate of domestic demand, the gasoline stocks as of November 30 represent 32 days' supply as compared with 28 days' supply on hand a month ago and 29 days' supply on hand a year ago.

Kerosene exports declined materially—2,252,000 bbls. in October and 1,319,000 bbls. in November—and stocks increased. Exports of lubricants also fell off materially in November, amounting to only 604,000 bbls. as againt 1,077,000 bbls. in October.

The refinery data of this report were compiled from schedules of 349 refineries, with an aggregate daily recorded crude oil capacity of 3,610,000 bbls., covering as far as the bureau is able to determine, all operations during November. These refineries operated at 75 per cent of their recorded capacity, given above, as compared with 351 refineries, operating at 79 per cent of their capacity in October.

Statistics of Important Fields

As was the case in October, all of the flush production fields of the country, with the exception of the Oklahoma City Pool, declined in output in November. The daily average output of the Oklahoma City Field amounted to 55,000 bbls. in November as compared with 41,000 bbls. in October. This field continued to hold the spotlight in the Mid-Continent district and a number of large wells were completed during the month. An outstanding response to the curtailment efforts in California was evidenced at both Long Beach and Santa Fe Springs, the former declining from a daily average of 163,000 bbls. in October to 116,000 bbls. in November, the latter falling even more noticeably from 268,000 bbls. in October to 161,000 bbls. in November. Seminole continued to decline steadily, though the November decrease was less marked than that of October. The daily average output of the West Texas fields also continued to fall off, the result principally of the rapid decline in the Hendricks Field.

Stocks at Seminole reflected the decline in output and fell off from 18,577,000 bbls. on hand the first of the month to 17,754,000 bbls. on November 30.

Oil well completions in the Seminole district declined from 108 in October to 50 in November, or more than 50 per cent. Fewer wells were completed in the Long Beach Field, but both West Texas and Santa Fe Springs recorded a material increase in total initial production in November. The total number of wells drilling on November 30 in the four fields cited above was 760 as compared with 822 a month previous.

PRODUCTION AND GRAVITY (A.P.I.)

(Barrels of 42 U. S. gallons)

	November, 1929 — Total	November, 1929 — Dly. av.	October, 1929 — Total	October, 1929 — Dly. av.	November, 1928 — Total	November, 1928 — Dly. av.	Aver. gravity
Seminole.					8,913,000	297,000	39.0
St. Louis, etc.	9,790,000	326,000	11,004,000	355,000			
					3,890,000	130,000	40.0
Oklahoma City	1,644,000	55,000	1,280,000	41,000	.....	.....	39.0
West Texas	10,652,000	355,000	11,369,000	367,000	10,245,000	342,000	30.0
Long Beach*	3,467,000	116,000	5,046,000	163,000	5,870,000	196,000	26.0
Santa Fe Spgs.*	4,838,000	161,000	8,320,000	268,000	1,641,000	55,000	33.0

*From American Petroleum Institute.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (Barrels)

Domestic petroleum by fields of origin:	Nov., 1929 — Total	Nov., 1929 — Dly. av.	Oct., 1929 — Total	Oct., 1929 — Dly. av.	Jan.-Nov., 1929	Jan.-Nov., 1928
Appalachian	3,151,000	105,000	3,143,000	101,400	31,091,000	30,023,000
Lima-Indiana	108,000	3,600	193,000	6,200	2,124,000	1,473,000
Michigan	393,000	13,100	505,000	16,300	3,982,000	524,000
Illinois and S. W. Ind.	576,000	19,200	581,000	18,700	7,645,000	7,736,000
Mid-Continent	48,406,000	1,613,500	51,129,000	1,649,300	528,590,000	488,172,000
Gulf Coast	5,448,000	181,600	5,162,000	166,500	48,105,000	42,155,000
Rocky Mountain	2,257,000	75,300	2,408,000	77,700	24,927,000	28,560,000
Deliveries and exports	60,339,000	2,011,300	63,121,000	2,036,100	646,464,000	598,643,000
Deliveries	58,483,000	1,949,400	60,983,000	1,967,200	629,327,000	586,474,000
Foreign petroleum	4,520,000	150,700	5,767,000	186,000	73,157,000	72,801,000
Deliveries of domestic and foreign petroleum	63,003,000	2,100,100	66,750,000	2,153,200	702,484,000	659,275,000

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons)

Field—	Nov., 1929 — Total	Nov., 1929 — Daily av.	Oct., 1929 — Total	Oct., 1929 — Daily av.	Jan.-Nov., 1929	Jan.-Nov., 1928
Appalachian	2,937,000	97,900	3,201,000	103,300	30,739,000	28,496,000
Lima-Indiana	115,000	3,900	134,000	4,300	1,439,000	1,547,000
Michigan	393,000	13,100	505,000	16,300	3,982,000	523,000
Illinois-S. W. Indiana	584,000	19,500	642,000	20,700	6,649,000	6,822,000
Mid-Continent	45,382,000	1,512,700	49,175,000	1,586,300	537,727,000	504,879,000
Gulf Coast	5,224,000	174,100	5,209,000	168,000	50,293,000	42,524,000
Rocky Mountain	2,208,000	73,600	2,338,000	75,400	24,098,000	26,900,000
California	21,318,000	710,600	26,900,000	867,700	270,337,000	*210,290,000
United States total	78,161,000	2,605,400	88,104,000	2,842,000	925,264,000	821,981,000
State:						
Arkansas	1,806,000	60,200	1,971,000	63,600	23,201,000	29,553,000
California	21,318,000	710,600	26,900,000	867,700	270,337,000	210,290,000
Colorado	151,000	5,000	168,000	5,400	2,132,000	2,561,000
Illinois	506,000	16,900	565,000	18,200	5,814,000	5,948,000
Indiana	83,000	2,800	82,000	2,600	895,000	957,000
Southwestern	78,000	2,600	77,000	2,500	835,000	874,000
Northeastern	5,000	200	5,000	100	60,000	83,000
Kansas	3,433,000	114,400	3,677,000	118,600	39,398,000	35,629,000
Kentucky	725,000	24,200	810,000	26,100	7,065,000	6,762,000
Louisiana	1,656,000	55,200	1,893,000	61,100	18,455,000	10,131,000
Gulf Coast	592,000	19,700	694,000	22,400	6,633,000	6,434,000
Rest of State	1,064,000	35,500	1,199,000	38,700	11,822,000	13,697,000
Michigan	393,000	13,100	505,000	16,300	3,982,000	523,000
Montana	243,000	8,100	262,000	8,400	2,946,000	3,665,000
New Mexico	238,000	7,900	241,000	7,800	1,441,000	837,000
New York	281,000	9,400	289,000	9,300	3,048,000	2,338,000
Ohio	532,000	17,700	596,000	19,300	6,166,000	6,483,000
Central and Eastern	422,000	14,000	467,000	15,100	4,787,000	5,019,000
Northwestern	110,000	3,700	129,000	4,200	1,379,000	1,464,000
Oklahoma	19,120,000	637,300	20,669,000	666,700	233,579,000	227,097,000
Osage County	.....	.....	1,214,000	39,200	.....	18,252,000
Rest of State	.....	.....	19,455,000	627,500	.....	208,847,000
Pennsylvania	1,053,000	35,100	1,121,000	36,200	10,695,000	9,106,000
Tennessee	1,000	.....	2,000	100	19,000	44,000
Texas	24,591,000	819,700	26,174,000	844,300	273,387,000	234,993,000
Gulf Coast	4,632,000	154,400	4,515,000	145,600	43,660,000	36,090,000
Rest of State	19,959,000	665,300	21,659,000	698,700	229,727,000	198,903,000
West Virginia	455,000	15,200	512,000	16,500	5,125,000	5,227,000
Wyoming	1,576,000	52,600	1,667,000	53,800	17,579,000	19,831,000
Salt Creek	930,000	31,000	992,000	32,000	10,416,000	13,020,000
Rest of State	646,000	21,600	675,000	21,800	7,163,000	6,811,000
Classification by gravity (approx.):						
Light crude	69,409,000	2,313,700	79,183,000	2,554,200	832,852,000	734,402,000
Heavy crude	8,752,000	291,700	8,921,000	287,800	92,412,000	87,579,000

*Includes 6,000 bbls. for Alaska and Utah.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES (Barrels)

AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:		Nov. 30, 1929	Oct. 31, 1929	Nov. 30, 1928
East Coast: Domestic		8,695,000	8,940,000	8,243,000
Foreign		3,208,000	4,067,000	3,773,000
Appalachian		2,952,000	2,830,000	2,235,000
Indiana, Illinois, Kentucky, etc.		3,199,000	2,859,000	2,982,000
Oklahoma, Kansas and Missouri		5,372,000	5,305,000	5,849,000
Texas: Inland		1,702,000	1,798,000	1,885,000
Gulf Coast: Domestic		10,519,000	10,144,000	7,399,000
Foreign		585,000	615,000	179,000
Arkansas and inland Louisiana		1,046,000	1,183,000	1,098,000
Louisiana Gulf Coast: Domestic		3,910,000	4,122,000	3,954,000
Foreign		1,535,000	1,574,000	1,153,000
Rocky Mountain		1,512,000	1,426,000	2,017,000
Total east of California		44,235,000	44,863,000	40,767,000
ELSEWHERE THAN AT REFINERIES:				
Domestic—reported by field of origin:				
Appalachian:				
New York, Pennsylvania, West Virginia	Gross	4,787,000	4,890,000	5,318,000
Eastern and Central Ohio	Net	4,473,000	4,572,000	5,023,000
Kentucky:	Gross	828,000	947,000	961,000
	Net	690,000	805,000	810,000
Lima-Indiana:	Gross	663,000	656,000	1,397,000
	Net	477,000	470,000	1,214,000
Illinois-Southwest Indiana:	Gross	11,073,000	11,064,000	11,927,000
	Net	10,371,000	10,363,000	11,260,000
Mid-Continent:				
Oklahoma; Kansas; Panhandle, Central, North and West Texas:	Gross	266,157,000	268,994,000	250,505,000
	Net	253,425,000	256,147,000	238,581,000
Northern Louisiana and Arkansas:	Gross	25,062,000	25,402,000	28,402,000
	Net	21,460,000	21,742,000	25,638,000
Gulf Coast:	Gross	20,879,000	20,327,000	18,826,000
	Net	20,460,000	20,434,000	18,373,000
Rocky Mountain:	Gross	24,729,000	24,281,000	25,747,000
	Net	24,672,000	24,221,000	25,714,000
Total pipe line and tank farm stocks east of California	Gross	354,178,000	357,871,000	343,083,000
	Net	336,028,000	339,524,000	326,613,000
Foreign crude petroleum on Atlantic Coast		105,000	71,000	67,000
Foreign crude petroleum on Gulf Coast		25,000	44,000	175,000
		130,000	115,000	242,000
Total refinery, pipe line and tank farm stocks of domestic and foreign crude petroleum east of California		380,393,000	384,502,000	367,622,000
CLASSIFICATION BY GRAVITY (approx.):				
East of California:				
Light crude (24 degrees and above)		341,446,000	344,181,000	319,199,000
Heavy crude (below 24 degrees)		38,947,000	40,321,000	48,423,000
California:				
Light (20 degrees and above)		41,571,000	42,041,000	16,524,000
Heavy (including fuel)		110,718,000	111,076,000	97,439,000
PRODUCERS' STOCKS (not included above; approx.):				
East of California		6,150,000	6,250,000	6,608,000
California		656,000	694,000	(*)

*Not available.

STOCKS AT SEMINOLE-ST. LOUIS, ETC.

(Barrels of 42 U. S. gallons)

	Nov. 30, 1929	Oct. 31, 1929	Nov. 30, 1928*
Producers' stocks	537,000	525,000	439,000
Tank farm stocks	17,217,000	18,052,000	17,025,000
Total stocks	17,754,000	18,577,000	17,464,000

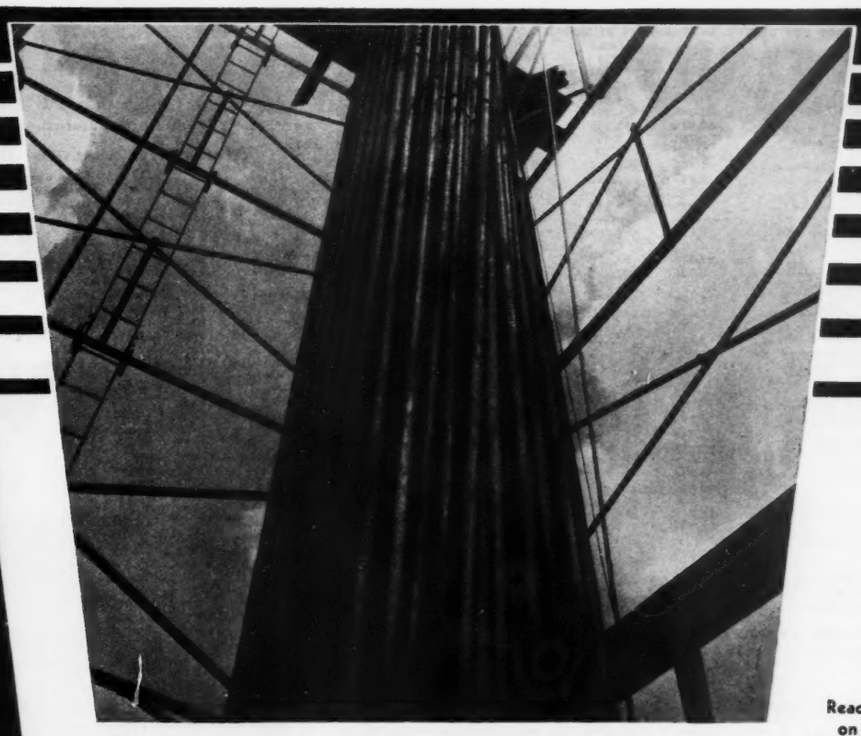
*Includes stocks at Seminole only.

RECORD OF WELLS, NOVEMBER, 1929*

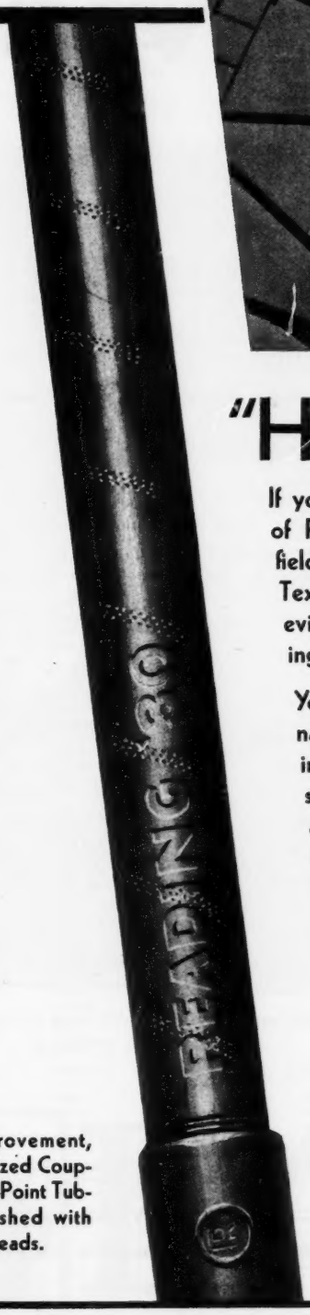
	Completions — Oil	Gas	Dry	Ttl. initial prod. (bbls.)	Av. initial prod. (bbls.)	Drill'g Nov. 30
Seminole, St. Louis, etc.	50	4	21	31,100	600	283
West Texas	73	..	42	115,500	1,600	258
Long Beach	9	..	..	5,200	600	53
Santa Fe Springs	20	..	..	56,600	2,860	168

*From The Oil and Gas Journal.

(Continued on next Page)



Reading Tubing on the job at Earlsboro, Oklahoma



"Hard Boiled" Evidence

If you want to know the facts about the superior endurance of Reading 5-Point Galvanized Tubing, go to the toughest fields—Seminole—Gulf Coast—El Dorado, Kansas—West Texas. Here you'll find a convincing mass of "hard boiled" evidence—evidence which shows that Reading 5-Point Tubing lasts from two to five times longer than ordinary tubing!

Yet there's even better proof! Being made of the original, time-tested, Genuine Puddled Wrought Iron, Reading 5-Point Tubing has a record of rust-resistance which stretches back for generations! There's no guesswork about the service this pipe will give. Insist on getting Genuine Puddled Wrought Iron, identified by the Reading name and indented spiral mark.

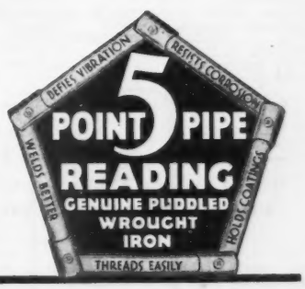
READING IRON COMPANY
Reading, Pennsylvania

Atlanta . Baltimore . Cleveland . New York
Philadelphia . Boston . Cincinnati . St. Louis
Chicago . New Orleans . Buffalo . Houston
Tulsa . Seattle . San Francisco . Los Angeles
Detroit . Pittsburgh . Kansas City

Reading pipe distributed by:

Frick-Reid Supply Corp. . Bradford Supply Co.
Republic Supply Co. . . . Superior Tube Co.
Own own stocks at Houston, Texas

As an added improvement, all Reading Galvanized Couplings for Reading 5-Point Tubing are now furnished with galvanized threads.



GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM 1/8 TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

NEW SUPPLY:	Nov., 1929	Oct., 1929	Nov., 1928*	Jan.-Nov., 1929	Jan.-Nov., 1928*
Domestic production:					
Crude petroleum	78,161	88,104	76,123	925,264	821,981
Daily average	2,605	2,842	2,537	2,770	2,454
Natural gasoline	4,504	4,912	3,769	47,814	38,397
Benzol	245	264	240	2,816	2,557
Total production	82,910	93,280	80,132	975,894	862,935
Daily average	2,764	3,009	2,671	2,922	2,576
Imports:					
Crude petroleum	4,535	5,766	6,908	73,028	72,960
Refined products	3,347	3,642	728	27,392	10,794
Total new supply, all oils	90,792	102,688	87,768	1,076,314	946,689
Daily average	3,026	3,313	2,926	3,222	2,826
Increase in stocks, all oils	†2,971	3,369	1,145	64,615	17,960
DEMAND:					
Total demand	93,763	99,319	86,623	1,011,699	928,729
Daily average	3,125	3,204	2,887	3,029	2,772
Exports:‡					
Crude petroleum	2,580	2,869	1,691	24,285	17,437
Refined products	10,440	13,940	11,299	123,603	126,044
Domestic demand	80,743	82,510	73,633	863,811	785,248
Daily average	2,691	2,662	2,454	2,586	2,344
Excess of daily average domestic production over domestic demand	73	347	217	336	232
STOCKS (end of month):					
Crude petroleum:					
Pine line, tank farm and refinery:					
East of California*	380,393	384,502	374,230	380,393	374,230
California§	152,289	153,117	113,963	152,289	113,963
Total crude§	532,682	537,619	488,193	532,682	488,193
Natural gasoline at plants	514	490	405	514	405
Refined products	144,623	142,681	126,505	144,623	126,505
Grand total stocks, all oils	677,819	680,790	615,103	677,819	615,103
Days' supply¶	217	212	213	224	222
Bunker oil (included above in domestic demand)	4,110	4,540	4,235	48,208	47,038

*1928 figures are final and include producers' stocks. †Decrease. ‡Includes shipments to Alaska, Hawaii and Porto Rico. §Includes fuel oil in California. ¶Grand total stocks all oils divided by daily average total demand.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)

(From Bureau of Foreign and Domestic Commerce)

	Nov., 1929		Oct., 1929		Jan.-Nov.,	Jan.-Nov.,
	Total	Dly. av.	Total	Dly. av.	1929	1928
Imports	4,535,000	151,200	5,766,000	186,000	73,028,000	72,960,000
From Mexico	708,000	23,600	1,043,000	33,700	11,951,000	16,291,000
From Venezuela	3,132,000	104,400	3,023,000	97,500	47,401,000	42,886,000
From Colombia	420,000	14,000	1,591,000	51,300	10,924,000	10,611,000
From other countries	275,000	9,200	109,000	3,500	2,752,000	3,172,000
Exports	2,580,000	86,000	2,869,000	92,500	24,285,000	17,437,000
Domestic crude oil:						
To Canada	2,223,000	74,100	2,428,000	78,300	20,593,000	14,095,000
To other countries	357,000	11,900	441,000	14,200	3,685,000	3,337,000
Shipments	.....	.....	.....	.....	7,000	4,000
Foreign crude oil	.....	.....	.....	.....	.....	1,000

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (Barrels)

	Nov., 1929	Oct., 1929	Nov., 1928	Jan.-Nov., 1929	Jan.-Nov. 1928
Crude oil	.....	.....	147,000	1,299,000	2,361,000
Refined products	2,518,000	2,886,000	1,648,000	25,192,000	18,691,000
Gasoline	2,131,000	2,289,000	1,288,000	21,507,000	14,892,000
Tops	.....	.....	.....	.....	339,000
Kerosene	50,000	54,000	.....	176,000	1,000
Gas oil	332,000	491,000	282,000	3,208,000	2,254,000
Fuel oil	3,000	28,000	2,000	104,000	845,000
Lubricants	.....	12,000	73,000	171,000	333,000
Asphalt	2,000	2,000	3,000	26,000	27,000

STOCKS HELD BY REFINING COMPANIES IN THE UNITED STATES NOV. 30, 1929

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)
East Coast	5,055,000	1,287,000	8,118,000	2,741,000
Appalachian	1,153,000	288,000	966,000	1,194,000
Indiana, Illinois, Kentucky, etc.	4,488,000	1,197,000	3,627,000	811,000
Oklahoma, Kansas, Missouri	3,249,000	1,071,000	4,761,000	435,000
Texas	5,771,000	1,528,000	15,370,000	1,720,000
Louisiana and Arkansas	1,664,000	755,000	3,272,000	122,000
Rocky Mountain	1,917,000	154,000	1,285,000	179,000
California	14,483,000	3,086,000	.....	915,000
Total	37,780,000	9,366,000	*37,399,000	8,117,000
Total 10/31/29	35,042,000	8,865,000	*38,717,000	8,021,000
Texas Gulf Coast	4,589,000	1,361,000	11,220,000	1,678,000
Louisiana Gulf Coast	1,411,000	709,000	2,206,000	116,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East Coast	84,400,000	25,600	93,000	99,000	8,415,000
Appalachian	19,207,000	5,600	3,300	55,000	1,540,000
Indiana, Illinois, Kentucky, etc.	16,084,000	51,400	56,900	225,000	4,490,000
Oklahoma, Kansas, Missouri	6,104,000	100,300	3,900	32,000	2,280,000
Texas	6,805,000	286,400	7,900	24,000	13,048,000
Louisiana and Arkansas	32,673,000	58,300	25,800	106,000	4,594,000
Rocky Mountain	20,276,000	110,600	5,600	80,000	1,498,000
California	.....	49,600	38,200	214,000	†9,758,000
Total	185,559,000	687,800	234,000	835,000	45,623,000
Total 10/31/29	189,094,000	672,100	227,400	687,000	45,965,000
Texas Gulf Coast	6,544,000	272,400	7,800	12,000	11,459,000
Louisiana Gulf Coast	32,673,000	58,300	21,800	101,000	4,148,000

*East of California. †Includes 3,004,000 bbls. tops.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, NOVEMBER, 1929

	Straightrun (bbls.)	%	Cracked (bbls.)	%	Natural gasoline (bbls.)	%	Total (bbls.)
East Coast	2,551,000	48	2,539,000	48	194,000	4	5,284,000
Appalachian	807,000	60	466,000	35	73,000	5	1,346,000
Ind., Ill., Ky., etc.	2,837,000	52	2,299,000	42	335,000	6	5,471,000
Okla., Kans., Mo.	3,110,000	58	1,795,000	34	407,000	8	5,312,000
Texas	4,085,000	49	3,381,000	41	814,000	10	8,280,000
Louisiana and Arkansas	1,123,000	42	983,000	37	•544,000	21	2,650,000
Rocky Mountain	574,000	47	537,000	44	117,000	9	1,228,000
California	5,179,000	67	1,163,000	15	*1,437,000	18	7,779,000
Total	20,266,000	54	13,163,000	35	3,921,000	11	37,350,000
Total Oct., 1929	21,702,000	55	13,352,000	34	4,609,000	11	39,663,000
Total Jan.-Nov., 1929	225,510,000	57	130,128,000	33	41,470,000	10	397,108,000
Total Nov., 1928	18,630,000	56	11,379,000	35	3,056,000	9	33,065,000
Gulf Coasts	3,568,000	44	3,586,000	44	983,000	12	8,137,000

*Includes 203,000 bbls. run through pipe lines.

NUMBER OF WELLS COMPLETED*

	Nov., 1929	Oct., 1929	Nov., 1928	Jan.-Nov., 1929	Jan.-Nov., 1928
Oil	1,404	1,535	1,187	14,455	11,456
Gas	303	262	258	2,587	2,498
Dry	742	702	621	7,292	6,473
Total	2,449	2,499	2,066	24,334	20,427

*From The Oil and Gas Journal and California office of American Petroleum Institute.

COMPARATIVE ANALYSES (Thousands of barrels of 42 U. S. gasoline)

		Runs to stills		Imports*		Exports*			Dom. demand	
		Total	Daily av.	Total	Daily av.	Total	Daily av.	Stocks end of period	Total	Dly. av.
Crude Petroleum—	Nov., 1929	81,061	2,702	4,535	151	2,580	86	†421,964	.....	...
	Oct., 1929	88,390	2,851	5,766	186	2,869	93	†426,543	.....	...
	Jan.-Nov., 1929	907,045	2,716	73,028	219	24,285	73	†421,964	.....	...
	Nov., 1928	77,149	2,572	6,908	230	1,691	56	†384,146	.....	...
	Jan.-Nov., 1928	833,775	2,489	72,960	218	17,437	52	†384,146	.....	...
		Production								
Gasoline—		Total	Dly av.							
	Nov., 1929	37,350	1,245	984	33	4,094	136	37,780	31,502	1,050
	Oct., 1929	39,663	1,279	1,026	33	6,053	195	35,042	32,816	1,059
	Jan.-Nov., 1929	397,108	1,189	8,152	24	55,244	165	37,780	345,302	1,034
	Nov., 1928	33,065	1,102	304	10	4,678	156	29,185	25,941	865
	Jan.-Nov., 1928	343,011	1,024	3,878	12	49,107	147	29,185	301,913	901
Kerosene—										
	Nov., 1929	4,829	161	34	1	1,319	44	9,366	3,043	101
	Oct., 1929	5,379	174	10	..	2,252	73	8,865	3,136	101
	Jan.-Nov., 1929	52,306	157	188	1	18,336	55	9,366	33,793	101
	Nov., 1928	4,935	165	....	..	2,091	70	8,886	2,591	86
	Jan.-Nov., 1928	54,585	163	182	1	20,798	62	8,886	32,798	98
Gas Oil and Fuel Oil—										
	Nov., 1929	36,134	1,205	2,297	77	4,098	137	‡148,117	.....	...
	Oct., 1929	38,974	1,257	2,589	84	4,057	131	‡149,793	.....	...
	Jan.-Nov., 1929	411,633	1,232	18,860	56	35,679	107	‡148,117	.....	...
	Nov., 1928	35,871	1,196	411	14	3,320	111	‡135,317	.....	...
	Jan.-Nov., 1928	389,744	1,163	6,622	20	41,159	123	‡135,317	.....	...
Lubricants—										
	Nov., 1929	2,555	85	3	..	604	20	8,117	1,858	62
	Oct., 1929	2,885	93	2	..	1,077	35	8,021	1,378	44
	Jan.-Nov., 1929	31,594	95	37	..	10,066	30	8,117	21,788	65
	Nov., 1928	2,748	92	1	..	895	30	7,921	1,763	59
	Jan.-Nov., 1928	31,665	95	11	..	10,177	30	7,921	21,438	64
Wax (thousands of pounds)—										
	Nov., 1929	50,775	1,693	2,609	87	26,685	890	185,559	30,234	1,008
	Oct., 1929	56,377	1,819	3,943	127	39,037	1,259	189,094	15,903	513
	Jan.-Nov., 1929	580,970	1,739	36,662	110	292,134	875	185,559	250,283	749
	Nov., 1928	56,665	1,889	2,994	100	25,168	839	103,949	23,356	779
	Jan.-Nov., 1928	575,459	1,718	22,602	67	366,095	1,093	103,949	278,655	832

*From Bureau of Foreign and Domestic Commerce, subject to revision. Exports include shipments to Alaska Hawaii, and Porto Rico. †Includes California light crude. ‡Includes California heavy crude and fuel oil.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, Nov., 1929

Input—	Crude oil— Domestic	Crude oil— Foreign	Unfinished oil rerun	Natural gasoline	Total Input (bbls.)
East Coast	9,403,000	5,171,000	1,284,000	194,000	16,052,000
Appalachian	2,649,000	.....	236,000	73,000	2,958,000
Indiana, Illinois, Kentucky, etc.	9,264,000	.....	842,000	335,000	10,441,000
Oklahoma, Kansas, Missouri	9,689,000	.....	358,000	407,000	10,454,000
Texas	17,474,000	167,000	826,000	814,000	19,281,000
Louisiana and Arkansas	5,571,000	360,000	338,000	544,000	6,813,000
Rocky Mountain	1,863,000	.....	520,000	117,000	2,506,000
California	19,444,000	.....	*506,000	†1,437,000	21,387,000
Total United States	75,363,000	5,698,000	4,910,000	3,921,000	89,892,000
Daily average, 11/29	2,512,100	189,900	163,700	130,700	2,996,400
Daily average, 10/29	2,668,500	182,800	143,200	148,700	3,143,200
Texas Gulf Coast	12,843,000	167,000	714,000	597,000	14,321,000
Louisiana Gulf Coast	3,655,000	360,000	70,000	386,000	4,471,000

Output—	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	5,284,000	697,000	7,661,000	890,000	23,604,000
Appalachian	1,346,000	321,000	585,000	382,000	7,343,000
Indiana, Illinois, Kentucky, etc.	5,471,000	419,000	3,142,000	321,000	4,025,000
Oklahoma, Kansas, Missouri	5,312,000	781,000	3,083,000	230,000	2,752,000
Texas	8,280,000	1,168,000	7,667,000	405,000	4,600,000
Louisiana and Arkansas	2,650,000	518,000	2,375,000	66,000	4,991,000
Rocky Mountain	1,228,000	75,000	536,000	38,000	3,460,000
California	7,779,000	850,000	11,085,000	223,000	.....
Total United States	37,350,000	4,829,000	36,134,000	2,555,000	‡50,775,000
Daily average, 11/29	1,245,000	161,000	1,204,500	85,200	1,692,500
Daily average, 10/29	1,279,500	173,500	1,257,200	93,100	1,818,600
Texas Gulf Coast	6,257,000	927,000	5,476,000	378,000	4,431,000
Louisiana Gulf Coast	1,880,000	431,000	1,228,000	59,000	4,991,000

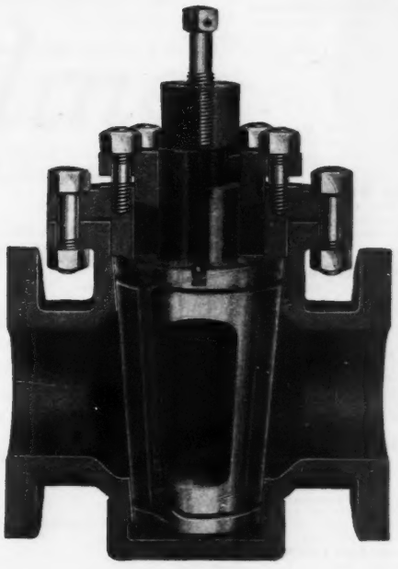
Output (Continued)—	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Shortage (bbls.)
East Coast	19,600	91,800	108,000	152,000	578,000
Appalachian	4,800	1,800	17,000	75,000	171,000
Indiana, Illinois, Kentucky, etc.	37,000	52,700	116,000	334,000	123,000
Oklahoma, Kansas, Missouri	24,000	2,500	41,000	389,000	463,000
Texas	38,200	13,800	21,000	625,000	831,000
Louisiana and Arkansas	13,000	26,400	206,000	560,000	214,000
Rocky Mountain	9,700	700	40,000	451,000	59,000
California	8,700	57,900	113,000	•528,000	431,000
Total United States	‡155,000	‡247,600	692,000	3,114,000	2,870,000
Daily average, 11/29	5,200	8,300	23,100	103,800	95,700
Daily average, 10/29	5,600	11,500	25,500	113,200	102,900
Texas Gulf Coast	33,700	13,700	5,000	386,000	632,000
Louisiana Gulf Coast	12,800	23,500	197,000	364,000	101,000

*Includes 162,000 bbls. net tops rerun. †Includes 203,000 bbls. run through pipe lines. ‡Wax, coke, and asphalt equivalent to 277.5 pounds per barrel and 5.15 and 5.52 bbls. per ton, respectively.

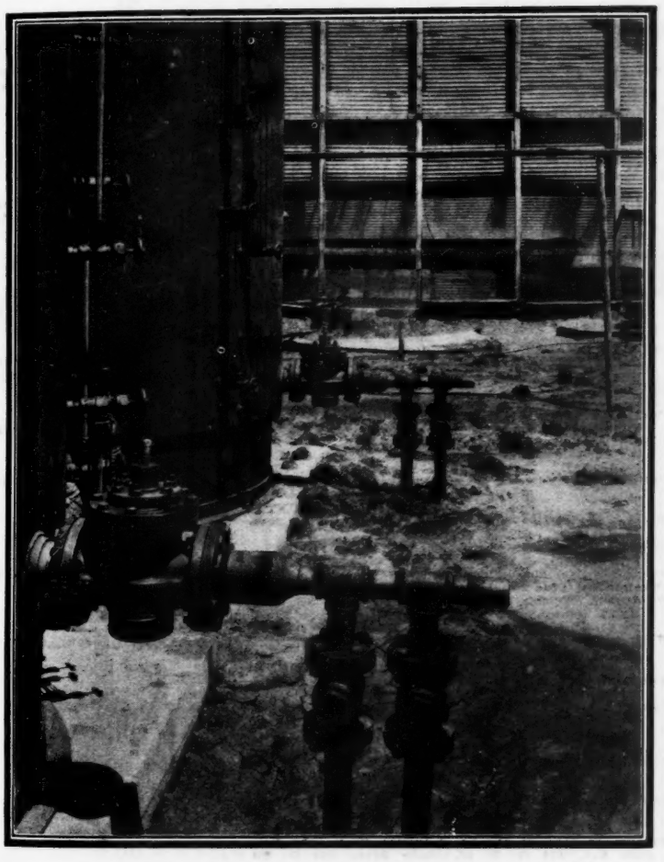
DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

		Month of November— 1928	1929	11 mos. ended Nov.— 1928	1929
Petroleum—					
Crude	Bbls.	1,690,987	2,579,532	17,432,394	24,305,248
Crude	$	2,412,985	3,933,680	24,680,811	34,730,509
Total refined petroleum	Bbls.	10,737,414	9,413,896	117,234,426	114,727,371
Total refined petroleum	$	43,258,353	33,318,805	431,655,668	449,333,865
Gasoline, naphtha and other light products	Bbls.	4,610,015	3,951,882	48,081,727	54,049,306
	$	22,611,823	17,676,026	214,783,491	241,497,131
Oils, illuminating	Bbls.	2,087,195	1,302,352	20,623,204	18,144,302
Oils, illuminating	$	8,954,681	5,457,717	87,897,888	77,148,925
Gas and fuel	Bbls.	3,144,130	3,554,696	38,387,327	32,598,843
Gas and fuel	$	3,662,270	•3,450,758	42,321,614	34,088,079
Lubricating	Bbls.	883,877	590,252	9,983,492	9,763,634
Lubricating	$	7,886,322	6,509,426	84,732,330	94,174,166
Other refined petroleum	Bbls.	12,197	14,714	158,676	171,586
Other refined petroleum	$	143,257	224,878	1,920,345	2,425,564
Paraffin wax	Lbs.	25,161,171	26,679,340	336,044,654	292,892,770
Paraffin wax	$	1,300,596	1,068,546	15,473,329	13,030,493

No lubricant waste in BARCO Valves



The double lubricating channels of Barco Valves are blind, connected to the main lubricating channels ONLY when out of contact with line pressure. The pressure therefore does not wash out the lubricant.



Barco Lubricated Plug Valves used in gasoline plants.

A FEATURE of Barco Lubricated Plug Valves that is saving oil companies and refineries maintenance expense is the design of the lubricating system. The plug surfaces between the ports are each lubricated through two vertical grooves, and horizontal grooves lubricate above and below these ports.

As the valve is opened or closed, one vertical groove becomes exposed to line pressure. In the Barco, this exposed groove is disconnected from the main lubricating channels while in contact with line pressure—therefore the latter does not wash out the lubricant.

In addition, the Barco Valve is made absolutely tight by fine machining and lapping. The lubricant is used only for ease of operation and for protection to the wearing surfaces.

Our latest bulletin tells more about the Barco features and about Barco lubricants. Write for it.

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Greene Brothers, Wichita Falls, Texas
Herbert Wolcott, El Paso, Texas
Petroleum Equipment Co., Los Angeles, Calif.

BARCO Valves and Joints

OGJ 1-9 Gray

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 54)

BROOKS COUNTY

Amos Dinn, trustee's No. 3 Garcia-Ramosi, Share B-1, Las Mestenas y Gonzales grant, 1,300 ft. S. line, 2,325 ft. W line of share B-1.....T. D. 1,520 ft.; drlg.

Humble Oil & Ref. Co. and Shell Petroleum Corp.'s No. 1 Singer, Alta Verde Subd., 2,500 ft. S of N line, 333 ft. W of E line of Sec. 312.....Spudded in.

CALDWELL COUNTY

J. Harper et al's No. 1 Crenshaw, in the J. Burleson Sur., 600 ft. NE and 320 ft. NW of farm.....Location.

W. E. Allaun and Calco Petroleum Co.'s No. 1 Martin...T. D. 2,920 ft., preparing to shoot.

Stone et al's No. 2 Robert Guinn, Joseph Burleson Sur., 150 ft. to NE and NW lines of 225-ac farm.....Drlg. 2,140 ft. in Del Rio.

Keen & Malcolm's No. 1 Mollie McNeal, George C. Kimball Sur., 2,500 ft. to W line, 860 ft. to N line, 1 mile S from old Luling Field.....T. D. 390 ft.; shut down.

San Antonio Petroleum Corp.'s No. 1 Gustave Walkerhagen, Thomas Maxwell Sur., 150 ft. to NW and SW lines, 11 miles W from Lockhart.....T. D. 1,138 ft.; cored Edwards; showing oil; top of Buda 992 ft.

W. H. Harper's No. 3 Thomas, J. Roberts Sur.....Fishing for pipe.

DE WITT COUNTY

Gibson & McIntyre's No. 1 William Van Roeder.....T. D. 1,480 ft.; shut down.

F. P. Zoch's No. 1 Steinman, John Garelli Sur., 976 ft. from SW line, 1,797 ft. from NW line.....T. D. 1,000 ft.; drlg. in gumbo.

H. T. Roe's No. 1 Leinhardt.....T. D. 1,750 ft.; shut down after testing sand at this depth.

DIMMIT COUNTY

Texas Fuel Gas Co.'s No. 1 City Nat'l Bank (Laxon).....Setting csg. at 680 ft.

Texas Fuel Gas Co.'s No. 1 Laxon, Sur. 653, 5 miles SW Carrizo Springs.....T. D. 1,425 ft.; setting csg.; test has shown some gas and rainbows of oil.

DUVAL COUNTY

National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3..Drlg. 1,570 ft.

F. P. Zoch's No. 1 King, Blk. 25, Howman Smith Subd., W. R. King ranch, Dugo Hinijosa grant, 660 ft. N line, 660 ft. E line.....Location.

Southern Oil Co.'s No. 1 Welder Wood, Sur. 215.....T. D. 750 ft.; standing, waiting on water.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlaw.....Shut down 3,000 ft. awaiting orders; expect to drill deeper.

FRIO COUNTY

Frank B. LeFeure's No. 1 H. W. and R. L. Eschenburg, Edward Gallagher Sur. No. 789, 3,980 ft. W of SE cor. of Edward Gallagher Sur. No. 788 and 1,320 ft. S of N line of Edward Gallagher Sur. No. 789.....Location.

GOLIAD COUNTY

Compton Oil Co.'s No. 1 Fromme, Dexter Sur.....Standing.

Humble Oil & Refining Co.'s No. A-2 M. C. Spangle, in the H.&G.N.R.R. Sur., 2,000 ft. N. 20 degrees W of No. A-1 M. C. Spangle, 6 miles N of Goliad.....T. D. 1,003 ft.; abandoned (core test).

Union Prod. Co.'s No. 1 Lucas, Juan Moya Delgado Sur.....Drlg. shale 3,065 ft.

GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur.....T. D. 1,595 ft. (corrected depth); shut down.

Adams & Lyles' No. 1 Jackson Sur.....T. D. 800 ft.; shut down.

Linderman Brothers' No. 2 F. H. Frampton, in Richard Heath Sur.....Derrick.

Finnell & Elam's No. 1 Robinson, Liverpool Sur.....T. D. 1,720 ft.; resumed drlg.

United North & South's No. 1 J. A. Kerr, in James Bowman Sur., 150 ft. S of CNL of tract, 11 miles W from Waelder.....Drlg. 3,529 ft.

United North & South Dev. Co.'s No. 1 J. E. Preston 120 acres, John Oetkins Sur., 1,350 ft. to S line, 750 ft. of W line.....T. D. 3,559 ft.; core identified as Carrizo sandstone.

Cullen & West's No. 1 E. Menking, Blk. 24, 150 ft. to N and 450 ft. to E line of Blk. 24, 14,050 ft. to NW and NE line of Sur.....T. D. 3,000 ft.; contract depth; shut down.

A. G. Keiffer's No. 1 B. B. Dix.....Drlg. in Taylor marl 2,800 ft.; drill stem stuck.

GUADALUPE COUNTY

Shell Petroleum Corp.'s No. 1 Denmann, Jose de la Baume Sur.....T. D. 3,312 ft in Austin chalk.

Grayburg Oil Co.'s No. 1 Wells, Jose La Baume.....T. D. 3,902 ft.; fishing for swab; will swab for several days and then deepen.

Pagenkopf & Kennon's No. 1 Haim, Joseph Kent Sur., 5 miles E of Seguin.....T. D. 1,987 F.; coring.

Adams-Lyles-Walton's No. 1 Zoberoski, in James D. Clements Sur.....T. D. 2,662 ft. in sulphur water; flowing.

HAYS COUNTY

E. A. Bucklin's No. 1 A. Elsner.....T. D. 1,800 ft.; drlg.

John H. Foster, Trustee, No. 2 W. G. Barber, 7 miles SE of Buda.....T. D. 610 ft.; cored dobie and top of Edwards; cut fault plane; owners believe too far northwest; have 3,500 acres and believe No. 1 at 671 ft. proves a field; will make additional location.

John H. Foster, trustee's No. 1 W. G. Barber, 7 miles SE from Buda.....T. D. 671 ft.; topped Edwards with show of oil; stdg.

JACKSON COUNTY

Wright Brothers' No. 7 Drushell.....Standing 3,875 ft.

JIM HOGG COUNTY

Deep Rock Oil Co.'s No. 1 Kelsey.....Standing 2,582 ft.

L. M. Holden's No. 4 Jones, 1,820 ft. to N line, 1,320 ft. to E line of 160 acres out of Share 5 "A," Dego Hinojosa grant.....Standing 42 ft.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur.....T. D. 2,615 ft.; shut down for holidays.

KARNES COUNTY

Ruby & Claypool's No. 1 Tom, V. Zepeda Sur., 850 ft. N line, 1,600 ft. E line.....Shut down in shale at 1,338 ft.

Benedum-Trees' No. 1 S. E. Crews, Britton Odem Sur....T. D. 4,185 ft.; drlg. in sandy clay; top Cook Mountain 2,600 ft.

Hurador Oil Co.'s No. 1 W. E. Porter.....Reaming hole down at 3,100 ft.

KERR COUNTY

L. R. Page and associates' No. 1 Real.....Drlg. below 4,500 ft.; T. D. 4,500 ft.

D. B. Mascho's No. 1 J. L. Love, C.C.S.D.&R.G.N.G. Sur., Sec. 1,594, 5,280 ft. to N line, 1,000 ft. to W line.....Water well completed; heavy duty cable tool rig on ground (first reported as O. E. Tunstill No. 1 Love Ranch).

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur.....T. D. 680 ft.; installed heavier rig (cable tools); report showing.

Sterling's No. 1 Willie Werner, 2 miles NW from Borgett No. 1 Haag.....T. D. 880 ft.; fishing (cable tools); 110 ft. oil in hole.

KLEBERG COUNTY

Bowen-Sarles' No. 1 Robert H. Simmons, Sec. 7, King Subd., 3 miles W from Ricardo.....Rigging up.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Sur. 117.....T. D. 2,710 ft.; in lime flowing sulphur water.

Mardon Oil Co.'s No. 2 Jim Clamp, in the John Winters Sur. No. 346, near No. 1.....Moving in cable tools.

LEE COUNTY

Byrd et al's No. 1 H. L. Bastie, 1,200 ft. N and 1,000 ft. E. of 80-ac. tract of Wm. Johnson.....Drlg. 3,000 ft.

Texas-Louisiana Corp. Carbon's No. 1 Bryan, in the S. F. Austin Sur., 1,200 ft. N and W of 1,200-ac. farm.....Shut down 3,120 ft.

Todor Oil Corp.'s No. 1 H. Zaesch, in the J. Meeks Sur., 150 ft. N and 900 ft. W of S. Meeks Sur.....Shut down 2,050 ft.

LIVE OAK COUNTY

O'Neil & Catlett No. 1 Smith, 900 ft. SW line, 150 ft. NW line.....T. D. 3,500 ft.; stdg. at contract depth; to deepen.

Dr. J. K. Rowan Co.'s No. 1 Lynne Ranch, 171 ft. W of George West.....Location.

Simmons Oil Co.'s No. 1 Richard Coquat, in James C. Hill Sur., 2,250 ft. to S line, 1,750 ft. to E line, 7 miles NE of Oakville.....T. D. 1,800 ft.; drlg. in shale.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 4 J. M. Chittim.....T. D. 5,645 ft.; drlg. in brown lime.

Rycade Oil Corp.'s No. 5 Chittim.....T. D. 2,010 ft.; drlg. in lime; produced a total of 1,500 bbls. from Eagleford at 1,500 ft.; pumped dry.

Rycade Oil Corp.'s No. 3 Chittim, Blk. 7, Sur. 116, H.& G.N., 175 ft. N of No. 1, 10 ft. W, 255 ft. S line.....T. D. 6,175 ft.; drlg. in lime producing 40 bbls. light oil, 3,000,000 ft. gas.

The Texas Company, 5 miles west Darling Switch.....T. D. 4,792 ft.; shut down; showed salt water.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts in George C. Hanson Sur.....T. D. 1,300 ft.; reached contract depth.

Donaldson Oil & Dev. Co.'s No. 2 Adams Co., James Hillemmeyer No. 25 Sur., 500 ft. to E line of survey, 150 ft. to S line of N half of survey.....Derrick timbers on ground.

T. N. T. Drilling Co.'s No. 1 V. Mangold, I. S. Palmer Sur. No. 20, SE cor., 1 mile from Noonan.....T. D. 1,230 ft.; shut down in Austin chalk.

Cecil Switzer's No. 1 Zerr, 6 miles west of Hondo.....T. D. 3,710 ft.; sidetracked tools and set liner; drlg. in Pennsylvanian.

R. C. Hill's No. 1 A. Wuezbach, G. Areola Sur., 500 ft. E line, 600 ft. S line.....Location.

MILAM COUNTY

Service Oil & Gas Co.'s No. 1 Muldrow, L. Taylor Sur., SE cor.....Location.

Hill & Bonwell's No. 1 B. Booker, James Welch Sur.....Fishing 2,020 ft.

Lloyd Oil Corp.'s No. 1 San Clement, Fokes Sur.....Spudded in.

A. H. Wray's No. 1 D. D. Fowler.....T. D. 1,688 ft.; sidetracked 300 ft. of drill pipe lost in hole; now drlg.

McMULLEN COUNTY

Cowboys Oil Co.'s No. 1 Shiner, H. M. Brewer Sur.....T. D. 2,280 ft.; shut down.

NUECES COUNTY

H. Grimm et al's No. 1 A. R. Roberts, Blk. 79, Winter Vegt. Garden Subd., 6 miles NW of Robstown, 12 miles NE Agua Dulce Field.....T. D. 2,124 ft.; sand under 2 ft. caprock; coring.

SAN PATRICIO COUNTY

LaFeria Oil & Gas Co.'s No. 1 C. C. Smith in J. C. White Sur., 690 ft. to N line, 350 ft. to E line.....T. D. 2,252 ft.; sand 2,246-52 ft.; odor of gas trying to make drill stem test.

STARR COUNTY

The Texas Company's No. 4-A V. G. Guerra, Porcion 67, Share 305-D.....T. D. 3,590 ft.; completed 50 bbls.

Adams, Scanlon, Scanlon & Wright's No. 1 Margo, Por. 71, Jurisdiction of Mier, 1,921 ft. W line, 430 ft. N line.....Standing at 30 ft.

Smith & Adams' No. 1 Welch, Pedernal Sur.....Drlg. 631 ft.; set 8-in. csg. at 440 ft.

UVALDE COUNTY

Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde.....T. D. 700 ft.; drlg. in Edwards.

Waldrop & Welch's No. 1 Edmonds, 2 miles SE of No. 1 Benson.....T. D. 600 ft.; drlg.

Waldrop & Welch's No. 2 Edmonds, 1½ miles S of No. 1.T. D. 458 ft.; drlg. in Edwards.

Phantom Oil Co.'s No. 1 Claudt, Sur. 661.....Building derrick.

Waldrop & Welch's No. 1 Edmonds, 2 miles SE from No. 1 Benson.....T. D. 600 ft.; drlg.

WILLACY COUNTY

Weimer—Richardson's No. 1 Elmore.....T. D. 1,860 ft.; shut down in gumbo.

WILLIAMSON COUNTY

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 220 ft. N and 330 ft. E of Sur.....Rigging up.

Powell & Kydendall's No. 1 Christian Mager in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres.....Shut down 1,501 ft.

WILSON COUNTY

Tidal Oil Co.'s No. 1 Felix Kulesza, Susanna Larrison Sur., 335 ft. to E line, 1,320 ft. to S line of 647-ac. tract.....Drlg. 3,237 ft.

Trinity Drillers' No. 1 Richter, in Trevino Sur., 3,005 ft. to E line, 350 ft. to N line of 88-ac. lease.....T. D. 4,340 ft.; drlg. in lower Taylor marl.

Rycade Oil Corp. et al's No. 1 George Hice, Juan Delgado Sur., 650 ft. W of Cibolo River, 150 ft. SE line of tract.....T. D. 700 ft.; drlg. (two tours).

Grayburg Oil Co.'s No. 1 Tigler, Parrot Sur.....Dropped from reports until work is resumed.

ZAPATA COUNTY

R. F. Blankenship's No. 1 G. T. Montemeyer, Sur. 45, Blk. 7, 150 ft. N and E lines.....Tested about 5 gals. oil each baller; T. D. 1,321 ft.; sand 1,309-10 ft.; steel line measure.

O. W. Killam's No. 1, J. G. Martinez Sur. No. 2, 550 ft. W line, 150 ft. S line of SE of survey.....T. D. 600 ft.; standing W. O. water.

Magnolia Petroleum Co.'s No. 3 F. G. Martinez Sur. No. 6, 660 ft. N line, 660 ft. E line of W half of survey..T. D. 1,876 ft.; completed 20,000,000 ft. gas.

John Pappas' No. 2 Cuellar, Por. 33 and 34.....T. D. 1,850 ft.; show oil; stdg.

National Oil Co.'s No. 1 D. B. Adams.....T. D. 670 ft.; resumed drilling; showing considerable gas.

ZAVALA COUNTY

Tritex Oil Co.'s No. 1 Clay Burns.....T. D. 730 ft.; standing.

Chicago Merchants Produce Co.'s No. 1 Fee, 1 mile E of La Pryor.....Drlg. 1,000 ft.

Tritex Oil Co.'s No. 2 Childress, one-fourth mile NW of old Dominion Co.'s No. 1 Pryor.....Drlg. 650 ft.

Weigand Brothers' No. 1 W. L. Gates, Hooper & Wade Sur. No. 13, 1,320 ft. S of N line, 1,320 ft. W of NE cor. survey, about 16 miles S of Batesville.....Spudding in.

Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34.....Spudded in and shut down.

Southern Crude Oil Purch. Co.'s No. 1 Nat M. Washer in the T. Pinckhardt Sur. No. 180, 1 deg. E, 6,795 ft. from SE cor.....Location.

Texas Gas & Fuel Co.'s No. 2 West in the W. Zuniga Sur.....T. D. 1,818 ft.; shut down; estimated 4,000,000 ft. gas; hole full salt water.

Texas Gas & Fuel Co.'s No. 3 West in the W. Zuniga Sur., 3,000 ft. from S line, 6,700 ft. from W line.....Drlg. 150 ft.

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FEWER BUT BIGGER WELLS FEATURE DECEMBER'S COMPLETION REPORT

December, usually the dullest month in the field in any year, because of the holidays, home going and consequent general delay in completing wells and in drilling operations, ran true to form in 1929. In the fields east of California there was a decline of 483 in completions as compared to November, and a falling off of 188 in the total of field operations at the close of the month.

Deep snows in the Eastern and Central West areas had much to do with the slowing up of development work. The Eastern fields, which completed 588 wells in November, report only 401 completions in December, while a decline of 85 in rigs and drilling wells is also noted in that area.

In the matter of initial production the oil wells completed in December excelled the November completions. A total of 989 oil wells completed in December produced 339,320 bbls. in initial production while 1,336 oil wells completed in November produced 370,444 bbls. initially. The December oil wells averaged 343 bbls. per well initially and those of November 277 bbls.

SUMMARY OF ALL FIELDS
WELLS COMPLETED

Field—	Comp.	Prod.	Dry	Gas
Eastern	401	2,100	30	90
Central Ohio	115	1,067	25	58
Lima	16	145	7	2
Indiana	11	248	2	2
Michigan	38	2,505	8	5
Illinois	43	1,252	17	1
Kentucky	81	3,608	18	9
Kansas	82	10,042	37	0
Oklahoma	283	127,327	89	39
North Central Texas	294	15,028	155	9
East Central Texas	18	6,070	12	1
East Texas	10	0	2	8
West Texas	85	76,663	25	9
Panhandle Texas	33	20,327	5	11
Southwest Texas	96	8,479	43	23
Gulf Coast	137	62,102	50	9
Arkansas	16	265	7	0
North Louisiana	64	1,147	21	31
Montana	31	690	14	7
Wyoming	8	723	3	0
Colorado	8	132	6	0
New Mexico	8	0	7	1
Utah	2	0	2	0
Total December	1,880	339,320	585	306
Total November	2,363	370,444	724	302
Difference	483	31,124	139	3

RIGS AND WELLS DRILLING

	Rigs	Dry	Total
Eastern	138	421	559
Central Ohio	66	157	223
Lima	5	31	36
Indiana	4	41	45
Michigan	68	107	175
Illinois	1	56	57
Kentucky-Tennessee	7	172	179
Alabama	1	4	5
Mississippi	6	14	20
Kansas	46	261	307
Oklahoma	140	855	995
North Central Texas	96	427	523
East Central Texas	11	23	34
East Texas	4	12	16
West Texas	55	260	315
Panhandle Texas	22	118	140
Southwest Texas	57	174	231
Gulf Coast	39	204	243
Arkansas	8	53	61
North Louisiana	58	115	173
Montana	20	86	106
Wyoming	23	131	154
Colorado	22	77	99
New Mexico	28	82	110
Utah	2	29	31
Total December	927	3,910	4,837
Total November	922	4,103	5,025
Difference	5	193	188

OKLAHOMA FIELDS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	15	1,523	2	4
Cotton	11	784	1	0
Creek	24	430	8	3
Hughes	5	250	4	0
Kay	3	946	2	0
Muskogee	10	66	3	4
Okfuskee	13	417	6	1
Okmulgee	16	185	5	5
Osage	18	435	6	6
Oklahoma	8	60,851	0	0
Pawnee	9	547	3	0
Pontotoc	13	725	1	1
Pottawatomie	30	13,122	10	2
Seminole	58	42,065	16	3
Stephens	12	835	4	1
Wagoner	5	0	4	1
Miscellaneous	33	4,146	14	8
Total December	283	127,327	89	39
Total November	297	107,444	97	46
Difference	14	19,883	8	7

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Caddo	0	12	12
Carter	1	14	15
Cotton	1	10	11
Creek	2	66	69
Grady	3	5	8
Grant	1	14	15
Hughes	8	10	18
Kay	0	6	6
Kiowa	0	9	9
Logan	0	13	13
Lincoln	0	14	14
Muskogee	8	22	30
Oklahoma	24	161	185
Okfuskee	9	31	40
Okmulgee	5	19	24
Osage	9	26	35
Pawnee	2	17	19
Payne	1	11	12
Pontotoc	2	31	33
Pottawatomie	24	61	85
Seminole	19	185	204
Stephens	6	32	38
Tulsa	1	17	18
Wagoner	1	12	13
Miscellaneous	6	63	69
Total December	140	855	995
Total November	130	888	1,018
Difference	10	33	23

KANSAS FIELDS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	11	218	7	0
Elk	4	300	2	0
Greenwood	18	1,580	7	0
Sedgwick	17	3,245	6	0
McPherson	5	2,654	2	0
Miscellaneous	27	2,045	13	0
Total December	82	10,042	37	0
Total November	82	8,376	39	2
Difference	0	1,666	2	2

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	3	23	26
Cowley	4	20	24
Elk	2	7	9
Ellis	3	7	10
Greenwood	5	23	28
McPherson	3	21	24
Marion	1	9	10
Rice	1	8	9
Russell	2	4	6
Sedgwick	4	23	27
Sumner	2	13	15
Woodson	3	12	15
Miscellaneous	13	91	104
Total December	46	261	307
Total November	45	284	329
Difference	1	23	22

GULF COAST
Summary of Field Operations
Southeast Texas

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Barbers Hill	11	5,597	2	0	3	19	22
Batson	2	9	0	0	0	1	1
Big Creek	4	12,925	0	0	6	2	2
Blue Ridge	1	20	0	0	1	2	3
Boling	0	0	0	0	0	1	1
Clay Creek	2	82	0	0	0	2	2
Damon Mound	0	0	0	0	1	1	2
DeWalt	6	1,995	0	0	3	3	6
Goose Creek	2	30	1	0	1	1	2
High Island	0	0	0	0	0	1	1
Hull	7	4,200	0	1	0	10	10
Humble	6	495	4	0	4	12	16
Liberty	3	2,280	0	0	1	3	4
Nash	0	0	0	0	0	1	1
North Dayton	1	3,600	0	0	1	0	1
Orange	1	5	0	0	0	2	2
Orchard	1	0	1	0	0	1	1
Pierce Junction	6	5,600	3	0	0	12	12
Raccoon Bend	10	3,360	0	0	4	16	20
Refugio	15	3,842	0	0	6	4	18	22
Saratoga	0	0	0	0	0	1	1
Sour Lake	0	0	0	0	0	3	3
Spindletop	7	1,110	3	0	1	9	10
West Columbia	3	1,100	2	0	0	2	2
Miscellaneous	26	9,807	19	1	4	34	38
Total Dec.	114	56,057	35	8	28	160	188
Total Nov.	141	50,538	44	12	29	158	187
Difference	27	5,519	9	4	1	2	1

South Louisiana

Bayou Boulion	1	0	1	0	1	1	2
Edgerly	1	1,800	0	0	2	1	3
Hackberry	3	2,000	2	0	1	4	5
Jennings	2	740	0	0	0	3	3
Lockport	1	0	0	1	0	2	2
Sorrento	1	0	1	0	0	1	1
Starks	1	100	0	0	0	2	2
Sulphur	2	1,400	1	0	1	2	3
Sweet Lake	1	0	1	0	0	1	1
Vinton	1	5	0	0	0	5	5
Miscellaneous	9	0	9	0	6	22	28
Total Dec.	23	6,045	15	1	11	44	55
Total Nov.	37	8,158	23	0	11	44	55
Difference	14	2,113	8	1	0	0	0

Gulf Coast

Total Dec.	137	62,102	50	9	39	204	243
Total Nov.	178	58,516	67	12	40	202	242
Difference	41	3,586	17	3	1	2	1

NORTH CENTRAL TEXAS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas wells
Archer	43	853	29	..
Baylor	6	240	3	..
Brown	28	1,791	14	..
Callahan	9	345	6	..
Clay	4	107	1	..
Coleman	13	784	5	1
Cooke	9	34	7	..
Comanche	1	...	1	..
Eastland	18	448	10	2
Erath	2	...	..	2
Fannin	1	...	1	..
Foard	1	98	..	..
Jack	12	1,618	6	..
Montague	6	232	1	..
Palo Pinto	3	57	..	2
Shackelford	22	456	15	..
Stephens	6	30	4	1
Tarrant	1	...	1	..
Throckmorton	4	25	2	1
Wichita	29	1,153	15	..
Wilbarger	32	5,499	15	..
Young	34	1,258	19	..
To al, December	294	15,028	155	9
Total, November	406	20,729	212	14
Difference	112	5,701	57	5

Summary of Operations

County—	Rigs	Shut down	Drilling	Ttl.
Archer	10	6	29	45
Brown	13	8	19	40
Callahan	4	9	5	18
Coleman	9	4	23	36
Cooke	2	4	17	23
Clay	1	1	3	5
Eastland	7	9	15	31
Erath	1	3	5	9
Haskell	..	2	..	2
Jack	4	4	15	23
Montague	..	..	6	6
Palo Pinto	..	2	8	10
Shackelford	3	4	14	21
Stephens	1	4	12	17
Throckmorton	2	2	2	6
Wichita	2	2	33	37
Wilbarger	21	20	54	95
Young	11	8	43	62
Miscellaneous counties	5	17	15	37
Total, December	96	109	318	523
Total, November	91	124	276	491
Difference	5	15	42	32

WEST TEXAS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas wells
Borden	1	...	1	..
Brewster	1	...	1	..
Crane	9	3,358	..	..
Concho	1	...	1	..
Fisher	2	480	1	..
Garza	1	...	1	..
Glasscock	4	3,814	..	..
Howard	10	4,215	..	..
Hudspeth	1	...	1	..
Irion	2	15	1	..
Jones	1	...	1	..
Loving	2	155	..	..
Pecos	41	63,886	12	..
Reeves	1	...	1	..
Schleicher	1	...	1	..
Sutton	2	...	2	..
Terrell	1	...	1	..
Ward	2	185	..	..
Winkler	2	555	..	..
Total, December	85	76,663	25	..
Total, November	115	115,452	42	..
Difference	30	38,789	17	..

Summary of Operations

County—	Rigs	Shut down	Drilling	Ttl.
Crane	9	..	6	15
Crockett	1	2	4	7
Fisher	..	1	4	5
Glasscock	3	..	7	10
Howard	11	6	35	52
Irion	2	3	5	10
Jones	..	3	3	6
Pecos	14	11	47	72
Reagan	2	1	11	14
Runnels	..	..	2	2
Upton	3	1	5	9
Ward	5	..	15	20
Winkler	..	2	4	6
Miscellaneous counties	5	44	38	87
Total, December	55	74	186	315
Total, November	68	88	170	326
Difference	13	14	16	11

TEXAS PANHANDLE
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	3	...	1	2
Cochran	1	...	1	..
Donley	1	...	1	..
Gray	20	19,997	1	4
Hutchinson	2	330	..	..
Wheeler	6	...	1	5
Total, December	33	20,327	5	11
Total, November	55	17,279	10	12
Difference	22	3,048	5	1

Summary of Operations

County—	Rigs	shut down	Drilling	Ttl.
Carson	4	8	14	26
Gray	10	16	38	64
Hutchinson	2	5	8	15
Moore	1	1	4	6
Wheeler	3	..	10	13
Miscellaneous counties	2	9	5	16
To al, December	22	39	79	140
Total, November	23	56	67	146
Difference	1	17	12	6

EAST CENTRAL TEXAS
Summary of Field Operations

County—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Anderson	4	500	1	1	4	3	7
Angelina	0	0	0	0	0	1	1
Cherokee	0	0	0	0	0	1	1
Falls	1	0	1	0	0	2	2
Henderson	1	0	1	0	0	2	2
Hill	3	0	3	0	0	1	1
Limestone	4	0	4	0	0	6	6
Milam	0	0	0	0	0	3	3
Navarro	0	0	0	0	1	1	2
Rusk	1	0	1	0	0	0	0
Upshur	0	0	0	0	0	1	1
Van Zandt	3	5,570	0	0	3	1	4
Smith	0	0	0	0	2	1	3
Woods	1	0	1	0	1	0	1
Total Dec.	18	6,070	12	1	11	23	34
Total Nov.	14	690	11	0	4	25	29
Difference	4	5,380	1	1	7	2	5

EAST TEXAS
Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Camp	0	0	0	0	0	1	1
Panola	8	0	0	8	4	7	11
Red River	0	0	0	0	0	3	3
Shelby	2	0	2	0	0	1	1
To al Dec.	10	0	2	8	4	12	16
Total Nov.	6	0	1	5	2	17	19
Difference	4	0	1	3	2	5	3

*Gas production 6,360,000 feet.

SOUTHWEST TEXAS
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Mirando	36	560	17	11	9	34	43
Darst Creek	5	2,290	1	0	12	16	28
Agua Dulce	1	0	0	1	0	0	0
Refugio	26	2,614	0	9	6	23	29
Miscellaneous	28	15	25	2	30	101	131
Total Dec.	96	8,479	43	23	57	174	231
Total Nov.	68	10,400	35	12	71	155	226
Difference	28	1,921	8	11	14	19	5

ARKANSAS
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashley	1	0	1	0	0	1	1
Clark	0	0	0	0	0	1	1
Cleburn	0	0	0	0	0	2	2
Columbia	0	0	0	0	1	1	2
Drew	0	0	0	0	0	1	1
Faulkner	0	0	0	0	1	0	1
Garland	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	1	1
Little River	0	0	0	0	0	2	2
Logan	0	0	0	0	1	0	1
Madison	0	0	0	0	0	1	1
Nevada	0	0	0	0	1	1	2
Ouachita	10	190	3	0	1	13	14
Pike	0	0	0	0	0	1	1
Pope	0	0	0	0	0	1	1
Prairie	0	0	0	0	0	1	1
St. Francis	0	0	0	0	0	1	1
Union	5	75	3	0	3	18	21
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	3	3
White	0	0	0	0	0	1	1
Total Dec.	16	265	7	0	8	53	61
Total Nov.	19	730	10	2	11	52	63
Difference	3	465	3	2	3	1	2

LOUISIANA
Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rigs	Dlg.	Ttl.
Bossier	5	510	0	3	9	15	24
Caddo	14	382	8	0	6	18	24
Catahoula	0	0	0	0	0	1	1
Claiborne	0	0	0	0	1	3	4
DeSoto	2	0	2	0	2	4	6
Franklin	0	0	0	0	0	2	2
LaSalle	2	50	1	0	1	5	6
Morehouse	5	0	1	4	4	4	8
Natchitoches	0	0	0	0	0	3	3
Ouachita	8	0	1	7	11	13	24
Rapides	0	0	0	0	0	1	1
Red River	2	0	2	0	1	4	5
Richland	11	0	1	10	7	20	27
Sabine	5	165	3	0	10	8	18
Webster	2	40	0	1	4	11	15
Union	8	0	2	6	1	3	4
West Carroll	0	0	0	0	1	0	1
Total Dec.	64	1,147	21	31	58	115	173
Total Nov.	69	8,345	20	32	57	126	183
Difference	5	7,198	1	1	1	11	10

*Gas production: Bossier, 29,586,000; Morehouse, 15,824,000; Ouachita, 14,929,000; Richland, 226,662,482; Webster, 31,196,000; Union, 29,527,638; total, 347,725,120.

MISSISSIPPI
Summary of Field Operations

	Rigs	Drg.	Ttl.
Alcorn	0	1	1
Chickasaw	0	1	1
Harrison	1	0	1
*Hinds	1	2	3
Humphreys	0	1	1
Lafayette	1	0	1
Lauderdale	1	2	3
Lincoln	0	1	1
Monroe	0	3	3
Rankin	0	1	1
Warren	0	1	1
Yalobusha	1	1	2
Yazoo	1	0	1
Total December	6	14	20
Total November	6	15	21
Difference	0	1	1

*Hinds County, one completion, fresh water.

ALABAMA
Summary of Field Operations

	Rigs	Drg.	Ttl.
Lamar	0	1	1
Sumpter	0	1	1

(Continued on Page 167)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

(Continued from Page 48)

Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Rig.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 .....Fishing 2,175 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Rig on ground.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w .....Abandoned 2,020 ft.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w ...Fishing 6,285 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Shut down 6,015 ft.

KIOWA COUNTY

Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w .....Shut down 490 ft.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w..Drlg. 1,272 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 ..Total depth 5,440 ft.; 15,000,000 ft. gas.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Shut down 1,450 ft.
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 .....Total depth 4,020 ft.; plug back to 2,550 ft.

LINCOLN COUNTY

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 .....Drlg. 5,670 ft.

LOGAN COUNTY

Currier's No. 1 Young, C SW NE SW Sec. 34-17-4w ....Rig.
Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w..Shut down 3,970 ft.

McINTOSH COUNTY

Jennings Bros.' No. 1 Crabtree, NW SW NE Sec. 31-10-14 .....Shut down 3,300 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MUSKOGEE COUNTY

Mid-Western Oil Co.'s No. 1 Unknown, C NW SW Sec. 31-12-19 .....Location.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ..Shut down 1,011 ft.
Cooper-Badget's No. 1 Young, NW NE NE Sec. 7-12-20e..Shut down 50 ft.

NOBLE COUNTY

Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w..Location.
Peerless et al's No. 1 Wentz, NW SW Sec. 22-22-1 .....Drlg. 3,279-3,300 ft.; made 140 bbls.; testing.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 2,795 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10..Shut down 3,661 ft.

OKLAHOMA COUNTY

Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .....Drlg. 3,342 ft.
Ryan & Martin's No. 1 Lawton, NE NW Sec. 3-11-2w ....Fishing 3,600 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....Fishing 6,911 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w .....Fishing 4,750 ft.

PITTSBURG COUNTY

Mid-Western Oil Co.'s No. 1 Unknown, SE SW NE Sec. 11-7-18 .....Total depth 1,764-1,961 ft.; abandoned.
Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Fishing 3,120 ft.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 .....Drlg. 3,350 ft.

POTTAWATOMIE COUNTY

Keister & Manning's No. 1 Rowlett, SW SE NE Sec. 30-8-4 .....Drlg. 3,270 ft.
Payne Drlg. Co.'s No. 1 Bullock, SE NE Sec. 22-6-3 ....Drlg. 3,827 ft.
Twin State's No. 1 Ray, NW SW Sec. 3-8-4 .....Wilcox 4,478-82 ft.; water; abandoned.
Prairie O. & G. Co.'s No. 1 Bodkin, SW cor. Sec. 26-8-4..Drlg. 3,870-3,990 ft.; swabbed 110 bbls.; drlg. 4,170 ft.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w....Rig.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 1,800 ft.

SEMINOLE COUNTY

Magnolia's No. 1 Webster, NE SE NW Sec. 31-6-8 .....Spudding.
Prairie's No. 1 Mingo, SE NE Sec. 25-6-5 .....Drlg. 4,140 ft.
Prairie O. & G. Co.'s No. 1 Harjo, NE SW NE Sec. 25-6-7 .....Rigging up standard tools 3,840 ft.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 25-5-5 ..... Location.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-22 .....Shut down 1,260 ft.
Buffington and others' No. 1 Melcher, C SW NW Sec. 31-12-24 .....Shut down 3,000 ft.

WOODS COUNTY

Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w .....Drlg. 2,200 ft.
S. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w .....Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Drlg. 6,055 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w .....Drlg. 5,803 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-23-17w .....Shut down 1,387 ft.
Prairie Oil & Gas and others' No. 1 Wilber, NE cor. NW Sec. 23-23-17w .....Drlg. 5,925-31 ft.; show gas.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w .....Fishing 4,968 ft.
Burgoyne Bros.' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

J. W. Ernest and Bryant's No. 1 Unknown, NW cor. Sec. 6-1-14 .....Shut down 800 ft.
Bryant-Croxton's No. 1 Mason, NW NE NW Sec. 4-1s-14..Shut down 800 ft.
Bookshire's No. 1 Guinn, NW cor. Sec. 18-3s-10 .....Shut down 100 ft.

BRYAN COUNTY

Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e .....Shut down 1,960 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Fishing 1,980 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19e .....Shut down 1,346 ft.

COTTON COUNTY

T. Medlin's No. 1 Johns, SW SE Sec. 8-2S-9w .....Rig.

JOHNSTON COUNTY

Smith & Knisely's No. 1 Lane, E half Sec. 29-1s-7 .....Abandoned 2,254 ft.

McCURTAIN COUNTY

Utopia Pet. Co.'s No. 1 Unknown, SE NW Sec. 14-9s-25..Location.
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Shut down 1,490 ft.

STEPHENS COUNTY

Smythe et al's No. 1 Johnson, NE cor. Sec. 30-2-8w ....Shut down 1,004 ft.

TILLMAN COUNTY

Allen Bros.' No. 1 Howell, SW NE Sec. 13-1-17w .....Shut down 610 ft.
Nance et al's No. 1 Massie, NE NW Sec. 36-1S-6w .....Location.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w .....Shut down 2,535 ft.

OKLAHOMA PANHANDLE

Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e .....Shut down 250 ft.

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WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

(Continued from Page 49)

Prairie's No. 1 Lachard, C NW SW NE Sec. 12-16-2 ....Drlg. 1,400 ft.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2 ..Spudding.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4 .....Drlg. 2,340 ft.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1 ....Drlg. 150 ft.

DOUGLAS COUNTY

Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17 ..Shut down 550 ft.

EDWARDS COUNTY

Skelly's No. 1 Johnson, NE SW Sec. 21-26-17w .....Drlg. 2,880 ft.
Barnsdall Oil's No. 1 McCarty, NW NE Sec. 31-25-17w..Shut down 2,010 ft.
Dixie & Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w .....Drlg. 2,615 ft.

ELK COUNTY

Empire and Arkansas Fuel's No. 1 Record, C NW NE SE Sec. 32-30-10 .....Underreaming 8-in. csg.; total depth 1,603 ft.

ELLIS COUNTY

Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Shut down 1,290 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w ....Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Fishing 2,555 ft.

ELLSWORTH COUNTY

Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w ..Drlg. 1,525 ft.

FORD COUNTY

McNabb et al's No. 1 Unknown, C SE Sec. 26-27-22w ..Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ...Shut down 390 ft.

GREENWOOD COUNTY

Ward & McGinnis' No. 1 Henley, SW NE Sec. 23-25-9 ..Rig.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Drlg. 400 ft.

HARPER COUNTY

Boeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 440 ft.

HARVEY COUNTY

Superior's No. 1 Regier, SE NW Sec. 11-22-3w .....Drlg. 2,685 ft.
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w .....Drlg. 3,810 ft.
Liggett et al's No. 1 Regier, C SE NW SE Sec. 2-23-3w..Drlg. 3,315 ft.
E. W. Marland, Inc.'s No. 1 Neiman, C NE SE NE Sec. 8-24-2 .....Chat 2,893-97 ft.; shut down.
McCulloch et al's No. 1 Prouty, NW cor. SW Sec. 3-23-1w .....Shut down 3,501 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w .....Shut down 3,360 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w..Abandoned 3,444 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w ....Abandoned 3,220 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w ..Drlg. 4,634 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 .....Rigged up and shut down.

KINGMAN COUNTY

D. P. Fleeger's No. 1 Ashcraft, SE SW NE Sec. 16-28-7w .....Drlg. 4,005 ft.
White Eagle's No. 1 Lorenz, C NE SW SE Sec. 25-27-5w.Fishing 3,774 ft.

LANE COUNTY

Robinson's No. 1 Dickerson, Sec. 11-18-27w .....3-in. csg. 2,625 ft.

LYON COUNTY

Gordan-Stats' No. 1 Proche, C NE SE NW Sec. 16-17-10..Shut down 1,400 ft.
F. A. Bailiere's No. 1 McKee, SW NE Sec. 32-21-11 ....Rig.

MARION COUNTY

Empire O. & R. Co.'s No. 1 Black, C NE NW SW Sec. 27-19-2 .....Rig.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.
White Eagle's No. 1 Ucker, NE NW Sec. 24-17-2 .....Drlg. 3,175 ft.

McPHERSON COUNTY

Galt Brown et al's No. 1 Zeitlow, C NE SE SE Sec. 7-17-1w .....Rig.
Dixie Oil Co.'s No. 1 Johnson, SW cor. Sec. 20-17-3w ..Drlg. 1,445 ft.
McCulloch Oil Co.'s No. 1 Cornelius, SW cor. Sec. 7-21-4..Shut down 3,230 ft.
Kansas Oil Co.'s No. 1 Otto, SW NW Sec. 21-20-1w ....Drlg. 2,630 ft.
Reynolds et al's No. 1 Koohn, NE SE NE Sec. 15-20-2w..Drlg. 3,355 ft.
McPherson O. & G. Co.'s No. 1 Fisk, SW NE NE Sec. 15-21-2w .....Drlg. 3,585 ft.
McPherson O. & G. Co.'s No. 1 Sorenson, C SE Sec. 23-18-2w .....Drlg. 3,602 ft.; water; shut down.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w .....Fishing 1,500 ft.
Transcontinental Oil Co.'s No. 1 Algers, NE SW Sec. 1-19-5w .....Drlg. 3,995 ft.

MORTON COUNTY

Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-42..Spudded; shut down.

MORRIS COUNTY

Urschell et al's No. 1 Scott, NE SW Sec. 6-16-6 .....Shut down 400 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, C SW Sec. 17-4-21w ....Rig on ground.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Grieve, NW SE NE Sec. 6-7-12w.Drlg. 3,965 ft.
Mid-Kansas' No. 1 Boyce, SE cor. NW Sec. 18-6-13w ....Drlg. 4,285 ft.

PAWNEE COUNTY

Prairie O. & G. Co.'s No. 1 Black, SW NE NE Sec. 11-20-18w .....Drlg. 2,100 ft.

PRATT COUNTY

O'Haver & Jones' No. 1 Garacke, C NE SW Sec. 7-26-14w .....Show gas 3,270 ft.
O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w.Fishing 4,743 ft.
Wilcox O. & G. Co.'s No. 1 Unknown, SW NW Sec. 7-26-15w .....Fishing 1,360 ft.

RENO COUNTY

Empire O. & R. Co.'s No. 1 Blitz, NE NW Sec. 36-25-4w .....Drlg. 3,885 ft.
Wilcox O. & G. Co.'s No. 1 McPheeters, SW NW Sec. 22-26-8w .....Drlg. 3,225 ft.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w .....Fishing 2,010 ft.
Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w ..Total depth 4,137 ft.; fishing.

RICE COUNTY

Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Rig.
Boucher's No. 1 Bieg, Sec. 16-21-10w .....Shut down 1,925 ft.
Miller & Detrick's No. 1 Shumway, C SW Sec. 2-20-9w ..Shut down 3,636 ft.; water.
Burgher's No. 1 Fair, C SE NE NE Sec. 14-21-10w .....Shut down 1,700 ft.
Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec. 24-20-6w .....Drlg. 2,580 ft.
Milmac's No. 1 Cain, C SE Sec. 29-19-7w .....Shut down 3,700 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Shut down 2,165 ft.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w.Rig.

RILEY COUNTY

Arkansas Fuel Oil Co.'s No. 1 Martin, SE NE SW Sec. 24-8-4 .....Shut down 2,570 ft.
Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 .....Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-6e..Shut down 2,245 ft.

ROOKS COUNTY

Central Commercial's No. 1 Baxa, Sec. 22-9-17w .....Drlg. 3,400 ft.

RUSH COUNTY

Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w .....Drlg. 2,516 ft.
Milmac's No. 1 Mohr, C NW Sec. 11-18-16w .....Shut down 50 ft.
Danciger Oil Ref. Co.'s No. 1 Pivonka, NE cor. SW NE Sec. 17-19-17w .....Abandoned 4,148 ft.

SALINE COUNTY

Austin et al's No. 1 Olsen, NW SW SE Sec. 10-15-4w ....Shut down 3,690 ft.
Templeman's No. 1 Lanbengager, C SW Sec. 20-15-5w ..Drlg. 3,655 ft.
Twin Mounds' No. 1 Weis, NW NE NW Sec. 20-13-4w..Shut down 700 ft.

SEDGWICK COUNTY

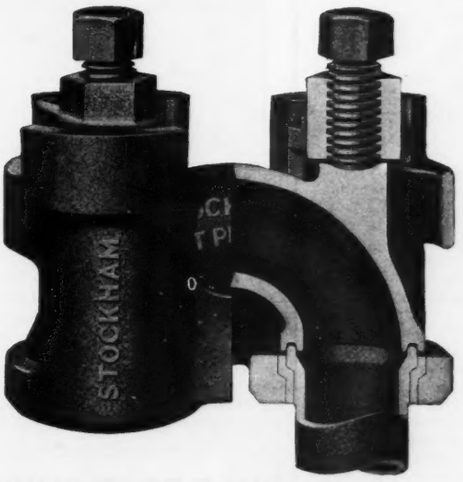
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w .....Spudding.
Marland and Amerada's No. 1 Sensorth, NW cor. Sec. 25-28-4w .....Drlg. 4,100 ft.

some facts about
STOCKHAM (FANTZ TYPE) RETURN BENDS

THE most impressive proof of how this assembly will withstand extreme conditions was a recent demonstration in which a bend designed for 5000 pounds pressure at 1000 degrees F. was tested to 23,000 pounds without trace of leakage. At this point the test was discontinued because the gauge broke.

We are constantly subjecting our lower pressure bends, completely assembled, joint made with steel stub tubes (without paste of any kind), to at least four times their working pressure without any difficulty.

Stockham Fantz-Type Return Bends are already installed, or are being installed, in refineries of ten of the largest oil companies in the United States. The results of these tests, which are made under severe working conditions, have exceeded all expectations.



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STOCKHAM
(FANTZ-TYPE)
RETURN BEND

THERE IS A STOCKHAM FITTING FOR EVERY OIL REQUIREMENT
ELECTRIC CAST STEEL—CAST IRON—MALLEABLE

McCullough Oil Co.'s No. 1 Buckles, NW cor. SE Sec. 3-28-1w ..... Fishing 1,115 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e. Shut down 1,385 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 ..... Drlg. 985 ft.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 8-12-14 .... Shut down 750 ft.

SHERIDAN COUNTY

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w ..... Spudded; shut down.

STAFFORD COUNTY

Gibson's No. 1 Mueller, C SW Sec. 11-23-14w ..... Underreaming 2,525 ft.

STEVENS COUNTY

Argus Gas Co.'s No. 1 Hobbe, C SE Sec. 17-32-37w ..... Shut down 520 ft.
McKenna's No. 1 Unknown, C NW NW Sec. 29-33-36w.. 8,000,000 ft. gas 2,760-90 ft.; completed.
Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w.. 11,000,000 ft. gas 2,615-2,780 ft.; well burning.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ..... Shut down 1,600 ft.

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w .. Drlg. 3,850 ft.

SUMNER COUNTY

Hatfield's No. 1 Dauber, NE cor. Sec. 18-30-1w ..... Shut down 50 ft.
Kingwood Oil Co.'s No. 1 Stayton, C NE Sec. 18-31-2w .. Drlg. 3,650 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w ..... Chat 3,651-58 ft.; est. 250 bbls. pinched to 50 bbls. daily.
Lario O. & G. Co.'s No. 1 Osborne, NE SE Sec. 21-30-1w ..... Fishing 3,300 ft.
E. K. Carey & Laredo Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e ..... Chat 3,625-40 ft.; dry; cementing tools 3,670 ft.
Shell Pet. Corp.'s No. 1 Armstrong, NE cor. Sec. 12-33-1e. Total depth 3,817 ft.; plugging back.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

TREGO COUNTY

Dixie and Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w ..... Shut down 825 ft.
Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE Sec. 29-15-21w ..... Drlg. 3,675 ft.
Producers & Refiners Corp.'s No. 1 Kingsley, C SE NW NW Sec. 24-14-21w ..... Drlg. 3,630 ft.
Phillips Pet. Co.'s No. 1 Spitz, SE cor. Sec. 24-12-25w .... Drlg. 3,985 ft.
Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w .... Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w.. Shut down 3,250 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3.. Shut down 3,100 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w ..... Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w .... Shut down 4,200 ft.; will run 5-in. csg.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w ..... Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w .. Shut down 3,250 ft.

RICHARDSON COUNTY

Norton et al's No. 1 Hauser, NE cor. Sec. 26-1-14 ..... Location.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w ..... Shut down 555 ft.

LOUISIANA SEVERANCE TAX

SHREVEPORT, La., Jan. 6.—The test case brought in 1928 to test the Louisiana severance tax law of that year by Shreveport operators in the name of the Ohio Oil Co., has reached the United States Supreme Court, and final orders in the case are expected some time in the spring. March 5 this year, the Supreme Court, in passing on the complaint of the company, directed the trial court, pending the consideration of the complaint to permit the company to pay the tax imposed under the severance tax law of 1922 and give bond for the payment of the remainder due the State should the higher rates be sustained.

GULF TO DISCONTINUE OPERATIONS IN COLOMBIA

NEW YORK, Jan. 4.—Gulf Oil Corp. has confirmed that it will discontinue all field operations now being conducted in Colombia by South American Gulf Oil Co., its subsidiary, as a result of the unfavorable attitude of the Colombian government toward the activities of foreign oil companies.

With the cessation of Colombian activities by Gulf, American oil field activities in that country will be virtually at a standstill. This situation results from the deadlock brought about by the new Colombian legislation affecting the oil industry which, in view of American oil companies, imposes impossible restrictions and burdens on foreign oil companies. One of the most drastic provisions of this legislation imposes a 16 per cent production tax, in addition to the usual royalties. Oil men here believe that unless the Colombian government radically modifies its attitude toward foreign oil companies, the oil industry in that country will suffer as severely as Mexico has in recent years through the loss of potential income from its oil resources.

Gulf's present step recalls the famed Barco concession dispute. This concession, covering the richest of Colombia's undeveloped oil fields, is held 75 per cent by Gulf and 25 per cent by Carib Syndicate. Early in 1926 the Colombian government canceled this concession and later confirmed the cancellation following an appeal by the American companies in August, 1928. The Barco case is now before the Colombian Supreme Court, but early action is not looked for. Previous experience has shown that the average time required by that court to adjudicate cases involving political and government matters is about eight years and three months, and because of this, oil interests do not expect to see a final decision in the Barco case until about 1937.

Since the cancellation of the Barco concession, the Gulf Oil Co. has limited its development work to two properties in the valley of the Magdalena River, and drilling activities have been gradually curtailed during the past year. Three wells now being drilled on the Leonard and Colombia Syndicate properties will be halted by the company's decision to suspend operations.

The entire question of Colombian oil legislation is again brought into the limelight by the Gulf announcement. Practically the only foreign oil company now producing in Colombia is the Tropical Oil Co., controlled by the Imperial Oil Co. of Canada, a subsidiary of the Standard Oil Co. of New Jersey. The Andean Pipe Line transports much of Colombia's crude production into Venezuela.

The Barco concession, which is not directly affected by this latest development, was granted to Gen. Virgilio Barco in 1905 in recognition of his services for putting down a rebellion. After he had been unsuccessful in his attempts to develop the properties he disposed of them in 1918 to a syndicate headed by Henry L. Doherty, who in turn sold them to the Gulf Oil Corp. and the Carib Syndicate.

NEW TYPE OF BOX SOLVES PROBLEMS IN HANDLING VARIOUS SIZED BOLTS

In building field warehouses it has always been more or less of a problem to provide space for the storage of machine bolts. Because of the great variation in lengths if the bins were made of uniform dimensions based upon the length of the average bolt many would extend out beyond the edge of the box while others would be almost lost inside of it.

At the new office and warehouse building of the National Supply Co.—Midwest, at Archer and Frankfort Streets, Tulsa, there has been incorporated a new type of bolt box that seems to have solved this difficult problem and the sketch herewith gives the general dimensions and shows the scheme that has been introduced into this construction.

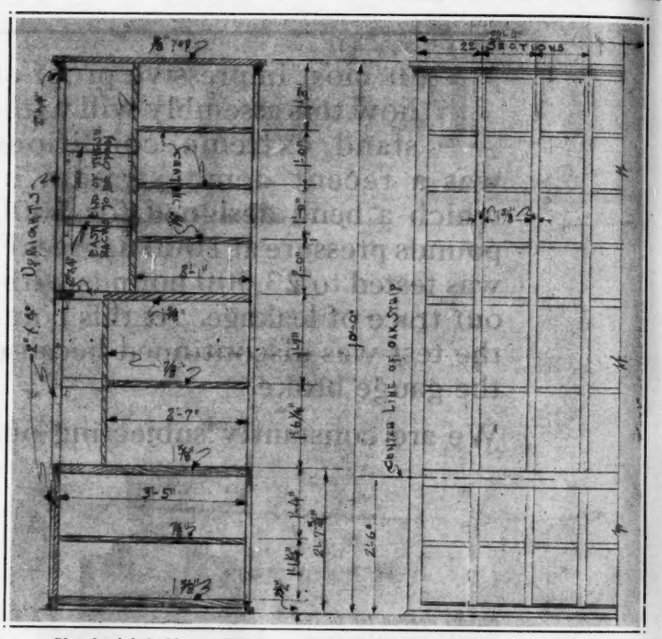
The left hand cross section taken vertically through the bin shows how space for each length of bolt has been provided, with the longest at the bottom and the shortest at top and those of intermediate lengths in between. In this way no bolts extend out into the aisle between the bins and still all are provided with ample storage space.

The front view shows how the bins are divided into 22 sections, each width being uniform but the height varying to accommodate the particular bolts intended for that compartment.

As the longest and therefore the heaviest bolts are at the bottom, with the smallest at the top, the warehouse man has little trouble in handling his stock, and as the bins are served by movable ladders a whole section can be moved over quickly.

These movable ladders also introduce a new feature in that they are provided with folding arms near the base which can be set in two positions, first to put the ladder in place for use, and second to lower the ladder against the side of the bin so that the passageway between bins is not obstructed. The arms are provided with rubber covered rollers which come in contact and roll over oak strips nailed across the face of the bin section at a height of 2 feet 6 inches.

The space on the back side of the bins has been divided off into long shelves upon which pony sucker rods and similar pieces of equipment are stored.



Sketch of bolt bins at Tulsa warehouse of National Supply Co.—Midwest.

GULF PORT SHIPMENTS SHOW SLIGHT DECLINE IN NOVEMBER

HOUSTON, Tex., Jan. 4.—Shipments of crude and refined products from Gulf Coast ports during November total 17,950,882.96 bbls., a slight decline from those of October, according to figures just compiled here. Shipments by companies and ports were:

REFINED PRODUCTS

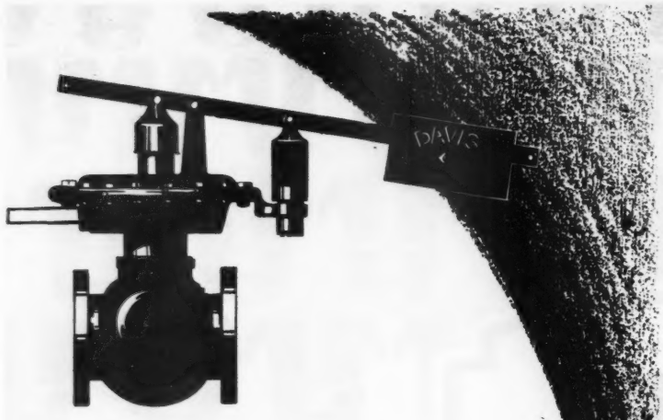
	Coastwise		Export	
	October	November	October	November
Standard Oil Co. (La.), Baton Rouge ..	714,287.00	803,477.00	676,896.00	613,117.00
The Texas Company, Port Arthur	1,304,406.00	1,241,767.00	415,227.00	383,100.00
Gulf Refining Co., Port Arthur	2,695,029.25	2,666,956.02	100,046.12	148,372.66
Magnolia Petroleum Co., Beaumont ...	698,639.66	877,774.95	.....	.....
Humble Oil & Ref. Co., Baytown	1,265,720.60	1,647,158.23	1,874,680.98	1,458,333.13
Atlantic Oil Prod. Co., Atreco	37,119.52	350,182.09	.....	.....
Pure Oil Co., Smiths Bluff	461,545.62	444,121.80	.....	.....
Deepwater Oil Refineries, Houston	.....	130,000.00	45,000.00	.....
Total refined	7,176,747.65	8,161,437.09	3,111,850.10	2,602,922.79
CRUDE				
Standard Oil Co. (La.), Baton Rouge ..	753,705.00	623,218.00	53,927.00	53,913.00
The Texas Company, Port Arthur	.....	.....	.....	.....
Gulf Refining Co., Port Arthur	223,698.27	364,120.09	.....	.....
Magnolia Petroleum Co., Beaumont ...	927,783.34	750,560.52	.....	.....
Humble Oil & Ref. Co., Texas City	894,572.00	628,380.00	.....	.....
Ingleside	145,749.00	196,122.00	.....	.....
Baytown	262,369.00	439,309.00	.....	4,381.00
Neches	.....	83,850.00	.....	.....
Harbor Island	1,352,918.00	1,602,493.00	513,327.00	306,615.00
Atlantic Oil Producing Co., Atreco	1,030,687.35	1,099,306.48	.....	.....
Beaumont	158,286.34	204,019.71	.....	.....
Smiths Bluff	37,510.54	.....	.....	.....
Pure Oil Co., Smiths Bluff	458,265.21	336,437.28	.....	.....
Sun Oil Co., Sabine Pass	825,995.00	493,798.00	.....	.....
Total crude	7,071,539.05	6,821,614.08	567,254.00	364,909.00
Total shipments	14,248,286.70	14,983,051.17	3,679,104.10	2,967,831.79

HONEST TOOLS

DRILLING AND FISHING TOOLS

HINDERLITER TOOL COMPANY

ROTARY AND STANDARD CABLE



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CALIFORNIA OIL FIELD OPERATIONS FOR NOVEMBER, 1929

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for November amounted to 21,317,540 bbls., an average of 710,585 bbls. per day. This is a decrease of 157,001 bbls. per day under October production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 1,096,094 bbls. The total stocks at the end of the month were 183,748,450 bbls. The total stock increase for 1929, up to November 30, was 43,747,556 bbls. Comparative figures as of November 30, 1929; October 31, 1929, and November 30, 1928, are shown in detail.

Sixty-eight wells were completed during the month with an initial daily production of 91,238 bbls., compared with 55 wells completed during October with an initial production of 50,563 bbls.

PRODUCTION

(Figures of Production and Stocks Are in Barrels of 42 Gallons)

District—	Bbls. per month	Daily Average Nov., 1929	Oct., 1929	Nov., 1928
Kern River	616,669	20,556	18,412	18,123
Mount Poso	356,921	11,897	11,022	84
Fruitvale	100,160	3,339	2,339	1,082
Round Mountain	45,277	1,509	1,065	46
McKittrick	142,125	4,738	4,640	4,867
Midway-Sunset	2,170,226	72,341	70,769	74,508
Elk Hills	517,656	17,255	17,249	19,549
Lost Hills-Belridge	128,736	4,291	4,312	4,324
Coalinga	289,895	9,663	9,459	10,175
Kettleman Hills	284,295	9,477	10,081	2,609
Wheeler Ridge	19,335	645	671	849
Watsonville	1,875	63	63	63
Santa Maria	102,191	3,406	3,023	5,242
Capitan	336	12	78	.....
Summerland	13,163	439	507	122
Elwood-Goleta	957,099	31,903	29,410	8,394
Santa Barbara	950	32	31	.....
Rincon	97,651	3,255	2,844	4,514
Ventura Avenue	1,706,774	56,893	60,943	52,017
Ventura-Newhall	148,461	4,949	4,793	5,769
Los Angeles-Salt Lake	47,622	1,587	1,496	1,546
Whittier	45,875	1,529	1,541	1,642
Fullerton (Brea Olinda)	400,673	13,356	13,538	15,729
Coyote	326,764	10,891	10,478	13,078
Santa Fe Springs	4,837,990	161,266	268,376	54,693
Montebello	277,412	9,247	9,368	10,840
Richfield	439,909	14,664	15,117	17,116
Huntington Beach	1,249,238	41,641	41,746	51,282
Long Beach	3,467,386	115,580	162,769	195,655
Torrance	395,531	13,184	13,466	15,701
Dominguez	280,261	9,341	8,491	10,323
Rosecrans	194,072	6,469	7,412	5,993
Inglewood	684,283	22,809	22,978	27,766
Newport	900	30	30	85
Seal Beach	917,350	30,578	37,003	29,154
Potrero	25,417	847	1,077	270
Lawndale	27,032	901	989	...
Total	21,317,540	710,585	867,586	663,584
November	26,895,160	867,586	.....	.....
Decrease	5,577,620	157,001		

STOCKS

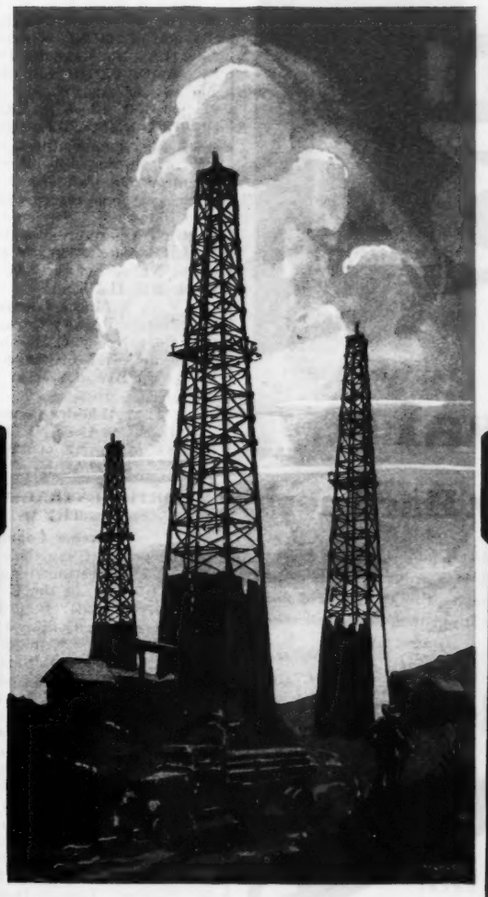
	Nov. 30 1929	Oct. 31 1929	Nov. stock decreases	Nov. 30 1928
Heavy crude, heavier than 20° A.P.I., including all grades of fuel	111,886,479	112,402,472	515,993	98,684,553
Refinable crude, 20° A.P.I., and lighter	42,255,303	42,728,740	473,437	17,243,243
Gasoline	16,485,197	16,184,992	*300,205	10,802,366
Naphtha distillates	3,275,219	3,506,174	230,955	1,480,812
All other stocks	9,846,252	10,022,166	175,914	9,418,103
Total all stocks	183,748,450	184,844,544	1,096,094	137,629,077

*Increase.

DEVELOPMENT

	New rigs up	Active drilling	Completed	Daily initial output	Active Producing	Abd. wells Drilled	Abd. wells Prod's
Kern River	3	4	3	525	952	2	..
Mount Poso	3	4	8	1,315	56	..	..
Fruitvale	1	3	2	1,222	10	..	..
Round Mountain	3	2	..	.....	11	..	..
McKittrick	1	2	..	.....	281	..	..
Midway-Sunset	13	34	9	4,440	2,173	..	..
Elk Hills	..	1	..	.....	204	..	..
Lost Hills-Belridge	1	5	1	18	301	..	..
Coalinga	..	4	..	.....	748	..	..
Kettleman Hills	..	29	..	.....	3	..	..
Wheeler Ridge	..	..	..	.....	33	..	..
Watsonville	..	..	..	.....	7	..	..
Santa Maria	1	6	..	.....	197	..	..
Capitan	..	..	..	.....	1	..	..
Summerland	2	1	2	155	95	..	..
Elwood-Goleta	3	8	4	15,415	18	..	..
Santa Barbara	..	1	..	.....	2	..	..
Rincon	2	4	1	305	*31	..	..
Ventura Avenue	..	31	1	4,550	187	..	..
Ventura-Newhall	4	21	1	50	519	2	..
Los Angeles-Salt Lake	..	..	..	.....	314	..	..
Whittier	1	..	..	.....	168	..	..
Fullerton	1	..	..	.....	370	..	..
Coyote	..	2	..	.....	208	..	..
Santa Fe Springs	12	166	20	56,580	534	..	2
Montebello	..	2	..	.....	177	..	..
Richfield	3	9	3	310	292	3	2
Huntington Beach	2	9	1	15	552	..	..
Long Beach	6	53	9	5,173	984	..	..
Torrance	..	..	..	.....	593	..	..
Dominguez	..	1	..	.....	58	..	..
Rosecrans	..	1	..	.....	103	..	..
Inglewood	..	..	..	.....	227	..	..
Newport	..	1	..	.....	3	..	2
Seal Beach	..	2	3	1,165	161	1	..
Potrero	1	13	..	.....	6	..	..
Lawndale	..	..	..	.....	7	6	..
Miscellaneous drilling	3	158	..	.....	.....	4	..
November	66	577	68	91,238	10,586	18	6
October	95	610	55	50,563	10,687	29	16
Decrease	29	33	*13	*40,675	101	11	10
Average for year 1928	107	520	59	59,802	10,823	15	25
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17
Average for year 1925	105	417	79	42,247	11,393	28	12
Average for year 1924	103	510	103	42,412	10,903	28	21

*Increase.



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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

For Week Ending December 25

Gray County

Smith & McDaniels' No. 1 T. B. Noble, 330 feet north and 283 feet east of the SW cor. of the NE of Section 49, Block A-9, H.&G.N. Magnolia Petroleum Co.'s No. 4 W. W. Harrah, 330 feet north and east of the SW cor. of the NW of Section 150, Block 3, I.&G.N. McIlroy Oil Co.'s No. 1 J. E. Arnold, 330 feet south and east of the NW cor. of the NW of Section 139, Block 3, I.&G.N. Operators Oil Co.'s No. 3 J. B. Bowers, at the center of the east 80 acres of the west 160 acres of Section 120, Block B-2, H.&G.N. Operators Royalty Co.'s No. 1 H. J. Eddington, 330 feet south and west of the NE cor. of the NW of Section 34, Block B-2, H.&G.N.

Moore County

Operators Royalty Co. and Dana Oil & Gas Co.'s No. 1 C. R. Jones, 330 feet north and west of the SE cor. of the SW of the SW of Section 164, Block 3T, T.&N.O.

Wheeler County

Upham Gas Co.'s No. 1 A. H. Finley, at the C of the NE of the NE of Section 66, Block 17, H.&G.N.

NORTH CENTRAL AND WEST TEXAS

Archer County

Producers Drilling Co.'s No. 1 Charles Carson, 1,650 feet north and 150 feet east of the SW cor. of the E half of the R. Neil Survey A-331. L. T. Burns and others' No. 1 J. M. Collins, 1,170 feet north and 150 feet east of the SW cor. of Section 33, G. P. Meade Subdivision, L. M. Pasture. L. T. Burns and others' H. F. Harmel, 150 feet north and east of the SW cor. of the south 40 acres of the E half of Section 25, G. P. Meade Subdivision, L. M. Pasture. F. C. Cullum and others' No. 4 Falls County School Land, 1,485 feet north and 150 feet west of the SE cor. of Section 9, Falls County School Land, A-130. F. C. Grebin's No. 1 W. M. Easterling-B, 150 feet south and east of the NW cor. of the N half of the SE of Section 20, G. P. Meade Subdivision, L. M. Pasture. Lawson-Duke and others' No. 3 W. T. Richardson, 450 feet south and 150 feet east of the NW cor. of the south 40 acres of the west 80 acres of Section 2,425, T.E.&L. Lawson-Duke and others' No. 4 W. T. Richardson, 150 feet north and east of the SW cor. of Section 2,425, T.E.&L. B. Minnich's No. 1 S. Covington, 150 feet north and 450 feet east of the SW cor. of the S. Covington 74.5-acre tract out of the John Richards Survey A-367. Pandem Oil Corp.'s No. 4 J. A. Young-D, 150 feet north and west of the SE cor. of the N half of the SE of Section 2,426, T.E.&L. M. Richards' No. 1 J. A. Young, 150 feet north and west of the SE cor. of the S half of the SE of Section 2,426, T.E.&L. G. R. Ridgeway and others' No. 1 D. W. Jackson Estate, 1,200 feet south and 1,050 feet east of the NW cor. of the J. T. Ellerd Survey A-883.

Brown County

P. French's No. 6 D. Belvin, 750 feet south and 150 feet east of the NW cor. of the SE of the SE of Section 42, H.T. &B.R.R. Survey. S. B. Owens, Inc., and others' No. 8 S. B. Cannon, 450 feet north and 150 feet east of the SW cor. of the S. B. Cannon 120-acre tract out of the W. Ahrenbeck & Brothers Survey No. 3, A-20. E. L. Smith Oil Co.'s No. 28 L. A. George, 702 feet north and 1,470 feet west of the SE cor. of Section 42, H.T.&B.

Callahan County

Holden & Delange's No. 1 N. Johnson, 200 feet south and east of the NW cor. of Section 81, Comal County School Land.

Clay County

Bunn-Marvin Drilling Co.'s No. 1 W. Applegate and others, 250 feet north and west of the most southerly SE cor. of the W. Applegate and others' 50-acre tract out of Section 74, Parker County School Land, A-374.

Comanche County

Sun Oil Co. and others' No. 1 C. V. Bryson, 300 feet south and west of the NE cor. of the E.T.R.R. Survey No. 30.

Cooke County

W. A. Graves' No. 1 Mrs. J. Carpenter, 150 feet south and 750 feet west of the NE cor. of the Mrs. J. Carpenter 102-acre tract out of the R. Warner Survey A-1,103. Humble Oil & Refining Co.'s No. 1 T. H. Sears, 150 feet north and east of the most northerly SW cor. of the T. H. Sears 210-acre tract out of the N. Barnett Survey A-124. Republic Production Co.'s No. 1 R. H. Hickman, 2,831 feet south and 498 feet west of the SW cor. of the H. P. Chamberlin Survey A-201 and located in the Lewis Knight Survey A-548.

Eastland County

J. E. Lewis & Co.'s No. 1 P. F. Turner, 450 feet south and west of the NE cor. of Section 16, Block 2, H.&T.C. Republic Production Co.'s No. 5 W. M. Sneed, 150 feet south and 450 feet east of the NW cor. of their 71-acre lease out of Section 30, McLennan County School Land, League 2. W. K. Hyer and others' No. 1 B. W. Patterson, 200 feet south and west of the NE cor. of the SE of Section 78, Block 4, H.&T.C.

Erath County

Associated Producers Co.'s No. 3 W. B. Cary, 175 feet north and west of the SE cor. of the N half of the W. B. Cary 199-acre tract out of the J. M. Espinosa Survey.

Howard County

Pure Oil Co.'s No. 3 A. J. Hooks, 2,440 feet north and 1,036 feet east of the SW cor. of Section 140, Block 29, W.&N.W. R.R. Schermerhorn Oil Co.'s No. 2 Kloh and others, 990 feet north and east of the SW cor. of Section 13, Block 33, Township 2s, T.&P.

Jack County

F. H. E. Oil Co.'s No. 1 Boyd Brothers, 150 feet north and east of the SW cor. of the S.F.I.W. Survey No. 1, A-555. C. W. Boller and others' No. 1 J. A. Raley, 1,666 feet north and 325 feet east of the SW cor. of the J. A. Raley 333-acre tract out of the I. Hughson Survey, A-256. Shaw Oil Co.'s No. 4 J. M. and W. E. Box, 150 feet north and 280 feet east of the most southerly SW cor. of their 62.7-acre lease out of the Hughson Survey, A-256. Shaw Oil Co.'s No. 5 J. M. and W. E. Box, 270 feet north and 160 feet east of the most westerly SW cor. of their 62.7-acre lease out of the I. Hughson Survey, A-256. Shaw Oil Co.'s No. 6 J. M. and W. E. Box, 200 feet south and 150 feet west of the NW cor. of the Ezel 102-acre tract and located on the J. M. and W. E. Box tract out of the Hughson Survey, A-256.

Montague County

Bridwell Oil Co.'s No. 1 J. S. Dennis, 150 feet south and 550 feet west of the NE cor. of the J. S. Dennis 383-acre tract out of the F. Robertson Survey, A-620. Carter and Rycade Oil Co.'s No. 11 R. W. Cunningham and others, 150 feet north and 750 feet west of the SE cor. of their 40-acre lease and located in the L. B. Norton Survey, A-574. Seitz-Comegys & Seitz and Humble Oil & Refining Co.'s No. 1 E. W. Lewis, 500 feet north and west of the SE cor. of Section 1, John Short Survey, A-663.

Palo Pinto County

Texas Pacific Coal & Oil Co.'s No. 164 S. J. Stuart and others, 1,330 feet south and 2,275 feet west of the NE cor. of Section 71, Block 4, T.&P.

Pecos County

Cardinal Oil Co.'s No. 1 J. H. Tippett (Sun), 165 feet north and east of the SW cor. of the D. F. Robertson Survey No. 1, A-5,187. Cardinal Oil Co.'s No. 1 J. H. Tippett (Tidal), 825 feet south and 495 feet west of the NE cor. of Section 40, Block 194, G.C.&S.F. Humble Oil & Refining Co.'s No. 13 Mrs. M. A. Smith, 1,778 feet south and 330 feet east of the NW cor. of Section 36, Block 194, G.C.&S.F. Simms Petroleum Co.'s No. 1 University Land,

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American Oil Works Company — PENN-DRAKE ETHYL
Anglo-American Oil Co., Ltd. — PRATTS ETHYL PETROL
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Associated Oil Company — ASSOCIATED ETHYL
Atlantic Refining Company — ATLANTIC ETHYL
Barnsdall Corporation — SUPER-GAS ETHYL
Bartles-Maguire Oil Company — BARTLES ETHYL
Beacon Oil Company — COLONIAL ETHYL
British American Oil Co., Ltd. — BRITISH-AMERICAN ETHYL
Champlin Refining Company — CHAMPLIN ETHYL
Col-Tex Refining Company — COL-TEX ETHYL
Continental Oil Company — CONOCO ETHYL
Continental Refining Company — CORECO ETHYL
Crystal Oil Refining Corp. — CRYSTAL ETHYL
Eason Oil Company — EASON ETHYL
Fleet-Wing Oil Corporation — FLEET-WING ETHYL
Freedom Oil Works Company — FREEDOM ETHYL
Home Oil Distributors, Ltd. — HOME ETHYL
Humble Oil & Refining Co. — FLASHLIKE ETHYL
Imperial Oil, Limited — IMPERIAL ETHYL
Independent Oil and Gas Co. — INDEPENDENT ETHYL
Johnson Oil Refining Company — JOHNSON ETHYL
Kendall Refining Company — KENDALL ETHYL
Lincoln Oil Refining Company — LINCO ETHYL
Louisiana Oil Refining Corp. — LORECO ETHYL
Mexican Petroleum Corporation — PAN-AM ETHYL
Mid-Continent Petroleum Corp. — NEVR-NOX ETHYL
Midwest Refining Company — RED CROWN ETHYL
A. D. Miller Sons Company — MILLER'S ETHYL
National Refining Company — WHITE ROSE ETHYL
Pan-American Petroleum Corp. — PAN-AM ETHYL
Pasotex Petroleum Company — RED CROWN ETHYL
Pennsylvania Refining Co. — PENRECO ETHYL
Pennzoil Company — PENNZOIL ETHYL
Phillips Petroleum Company — PHILLIPS '66' ETHYL
Producers and Refiners Corp. — PARCO ETHYL
Refiners Oil Company — REFINERS ETHYL
Richfield Oil Company — RICHFIELD ETHYL
Richfield Oil Co. of New York — RICHFIELD ETHYL
Rio Grande Oil Company — RIO GRANDE ETHYL
Root Refining Company — ROOT ETHYL
Shaffer Oil and Refining Co. — KANT-NOCK ETHYL
Shreveport-El Dorado Pipe Line Company — SPARCO ETHYL
Solar Refining Company — SOLAR ETHYL
Standard Oil Co. of California — STANDARD ETHYL
Standard Oil Company of Cuba — ESSO
Standard Oil Co. (Indiana) — RED CROWN ETHYL
Standard Oil Co. (Kentucky) — CROWN ETHYL
Standard Oil Co. of Louisiana — ESSO and STANDARD ETHYL
Standard Oil Co. (Nebraska) — RED CROWN ETHYL
Standard Oil Co. of New Jersey — ESSO and STANDARD ETHYL
Standard Oil Co. of New York — SOCONY SPECIAL
Standard Oil Company (Ohio) — SOHIO ETHYL
Standard Oil Co. of Pennsylvania — ESSO and STANDARD ETHYL
Sterling Oil Company — STERLING ETHYL
Texas Pacific Coal & Oil Co. — T-P ETHYL
Tidal Refining Company — TYDOL ETHYL
Tide Water Oil Corporation — TYDOL ETHYL
Transcontinental Oil Co. — MARATHON ETHYL
Union Oil Co. of California — UNION ETHYL
Utah Oil Refining Company — PEP ETHYL
Vacuum Oil Company — MOBILGAS ETHYL
Wadhams Oil Corporation — WADHAMS ETHYL
Waverly Oil Works Company — WAVERLY ETHYL
White Eagle Oil and Refining Co. — WHITE EAGLE ETHYL
White Star Refining Company — WHITE STAR ETHYL
Wirt Franklin Petroleum Corp. — PALACINE ETHYL

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1,650 feet north and 330 feet west of the SE cor. of Section 21, Block 21, University Land. Fisher & Lowery's No. 1 R. D. Webb, at the C of Section 3, Block 203, Tilman Walters Survey, A-5,319.

Shackelford County

Big State Oil Corp.'s No. 15 Russ-Webb, 600 feet south and 750 feet west of the NE cor. of Section 27, Block 11, T.&P. Coleman & Stiles and others' No. 2 A. A. Clark, 750 feet south and 150 feet east of the NW cor. of the SE of the NE of Section 2, Blind Asylum Land. Grisham-Hunter Corp.'s No. 5 W. Y. and R. A. Davis, 1,030 feet north and 1,030 feet east of the SW cor. of the N half of Section 20, Block 13, T.&P. Hart & Gist's No. 5 A. A. Clark, 150 feet north and east of the SW cor. of the NW of the NE of Section 2, Blind Asylum Land. Humble Oil & Refining Co.'s No. 1 I. N. Jackson, 1,300 feet south and 150 feet west of the NE cor. of Section 95, Block 12, T.&P.

W. G. Klinger and others' No. 1 W. E. Muse, 150 feet south and west of the NE cor. of the SE of Section 1, Blind Asylum Land. Roberts & Pool's No. 1 J. B. Matthews, 150 feet north and 450 feet east of the SW cor. of the SW of the SW of Section 29, Block 10, E.T.R.R.

Stephens County

Universal Oil and Gas Co.'s No. 1 W. A. Corbett, 1,900 feet south and 3,400 feet west of the NE cor. of the R. Campbell Survey, A-37. Byers Oil & Gas Co.'s No. 1 J. H. Suddeth, 300 feet south and west of the NE cor. of the W. N. Nolan Survey. Hickok Production & Development Co.'s No. 5 B. S. Walker, 390 feet north and 330 feet east of the NE cor. of Section 14, and located in Section 10, Lunatic Asylum Land.

Throckmorton County

L. Combest and others' No. 1 E. D. Horton, 450 feet north and 150 feet east of the SW cor. of Section 935, T.E.&L. L. Combest and others' No. 1 K. Leathers, 150 feet north and east of the SW cor. of the E half of the south 160 acres of Section 934, T.E.&L.

Tom Green County

Ellis and others' No. 1 Lewis, 450 feet south and 150 feet east of the SE cor. of the J. Webb Survey No. 77, and located in the A. Black Survey No. 75. D. W. Wiley and others' No. 1 Ed Maier, 110 feet south and 200 feet west of the NE cor. of the SW of Section 6, Blind Asylum Land.

Upton County

Humble Oil & Refining Co.'s No. 14 R. Ricker, 4,290 feet southwest of the northeast line and 3,280 feet southeast of the northwest line of Section 5, M. S. Denton Survey, A-127.

Wichita County

Barkley & Meadows' No. 1 J. W. Thomas, 1,260 feet south and 1,140 feet west of the NE cor. of the B. M. Giles Survey, A-88. Hi-land Oil Co.'s No. 3 W. H. Chilson, 450 feet south and west of the NE cor. of Section 9, Denton County School Land, Lengue 4, A-417. Mid-Continent Holding Corp.'s No. 9 M. G. Wilkerson and others, 450 feet south and 200 feet east of the NW cor. of the M. G. Wilkerson and others 69.97-acre tract out of Section 3, J. M. McCool Survey, A-192. Same corporation's No. 10 M. G. Wilkerson and others, 150 feet south and 200 feet west of the NE cor. of Section 3, J. M. McCool Survey, A-192. The Ascot Co.'s No. 3 J. L. Jackson, 450 feet south and 1,376 feet east of the NW cor. of Section 25, Denton County School Land, League 4, A-417. Comac Oil and Prairie Oil & Gas Co.'s No. 1 R. A. Neale, 150 feet north and 450 feet west of the SE cor. of the D.L.&C. Co. Survey, A-640. Continental Oil Co. and Hammond's No. 3 S. I. and H. M. Munger-A, 1,450 feet north and 150 feet west of the SE cor. of Block 31, Kemp Wichita Valley Land, being 150 feet north and west of the SE cor. of the lease "A". Culberson Co.'s No. 66 J. L. and T. J. Waggoner, 335 feet south and 1,330 feet west of the NE cor. of Section 13, B.S.&F., A-343. W. B. Hamilton and others' No. 1 A. Volkart, 479 feet south and 150 feet west of the NW cor. of the NE of Section 309, Waggoner Colony Subdivision.

Hamilton & Sheldon's No. 1 M. M. Robinson, 450 feet south and 150 feet east of the SW cor. of the SW of Section 321, Waggoner Colony Subdivision. Harris & Peckham's No. 1 E. Daume, 150 feet south and 260 feet east of the NW cor. of Section 1, S.P.R.R., A-266. Holcomb & Jones' No. 1 H. C. Obenhaus, 2,130 feet north and 1,170 feet west of the SE cor. of Section 876, M. E.P.&P., A-230. Humble Oil & Refining Co.'s No. 19 W. H. Taylor, 454 feet north and 500 feet west of the SE cor. of Block 81, Kemp Wichita Valley Land. G. L. Pace and others' No. 1 G. D. Kidder, 150 feet south and east of the NW cor. of the S half of Section 322, Waggoner Colony Subdivision. Stump & Co.'s No. 1 H. W. Barton, 4,650 feet north and 600 feet east of the SW cor. of the W. H. Spillers Survey, A-258. Turman Oil Co.'s No. 17 W. T. Waggoner, 530 feet north and 375 feet west of the SE cor. of their lease out of Section 148, H.&T.C., A-784. United Production Co.'s No. 10 W. L. Hodges-A, 150 feet north and 200 feet east of the SW cor. of their 40-acre lease out of the H.T.&B. Survey, A-139.

Wilbarger County

Atlantic Oil Producing Co.'s No. 8 W. T. Waggoner (Siegler), 325 feet south and 2,247 feet west of the NE cor. of Section 35, Block 2, H.&T.C. Empire Gas & Fuel Co.'s No. 30 W. T. Waggoner-B, 323 feet north and 662 feet east of the SW cor. of Section 32, Block 4, H.&T.C. Same company's No. 19 Waggoner-C, 655 feet north and 530 feet west of the SE cor. of the NW of Section 25, Block 4, H.&T.C. Grayback Development Co.'s No. 2 Waggoner (Bud), 450 feet north and 150 feet east of the SW cor. of the W half of the SE of the SE of Section 50, Block 2, H.&T.C. Grayback Development Co.'s No. 1 Waggoner (Hawkins), 600 feet south and 1,170 feet east of the NW cor. of Section 52, Block 2, H.&T.C. Lido Oil Co.'s No. 5 W. T. Waggoner-C, 960 feet south and 2,247 feet west of the NE cor. of Section 35, Block 2, H.&T.C. Waggoner Refining Co.'s No. 11 Waggoner-P, 150 feet north and 1,677 feet west of the SE cor. of Section 50, Block 2, H.&T.C.

Wise County

C. Rosenfield and others' No. 1 Texas L. & M. Co. (H. C. Graves), 583 feet north and 1,577 feet east of the SW cor. of Section 15, Smith County School Land.

Young County

Atlantic Oil Producing Co.'s No. 1 C. F. Kunkel, 123 feet south and 150 feet west of the NE cor. of the south 15 acres of the NE of Section 4, B.B.B.&C., A-1,700. O. Bratcher's No. 4 F. M. Culler, 450 feet south and 150 feet west of the NE cor. of the SE of the SW of Section 2, C.T.R.R. J. H. Cottom and others' No. 1 G. M. Jones, 150 feet south and 170 feet west of the NE cor. of the NW of Section 25, T.E.&L. W. L. Hawkins and others' No. 1 G. P. Stewart, 5,835 feet south and 1,646 feet east of the NW cor. of the D. Dawson Survey, A-76. E. R. Riggs' No. 2 P. J. Keeter, 450 feet south and 150 feet east of the NW cor. of Section 150, T.E.&L. E. R. Riggs' No. 4 P. J. Ketter, 150 feet south and 450 feet east of the NW cor. of Section 150, T.E.&L. United Production Co.'s No. 1 J. A. Leberman, 150 feet north and east of the SW cor. of the west 40 acres of the north 80 acres of the south 120 acres of Section 151, T.E.&L.

Wise & Jackson's No. 7 F. M. Cullers, 750 feet north and 150 feet east of the SW cor. of the NW of the SE of Section 2, C.T.R.R. Wise & Jackson and others' No. 2 R. H. Miller, 300 feet south and 150 feet west of the NE cor. of Lot 5, Miller Subdivision, A. Robus Survey, A-240. Wootten & Reed's No. 4 A. C. Casey, 1,150 feet north and 225 feet west of the SE cor. of the E half of the south 200 acres of Section 1,905, T.E.&L. Henryetta Drilling Co.'s No. 1 A. L. Lynn, 160 feet south and west of

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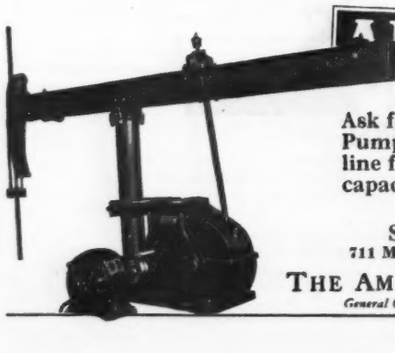

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the NE cor. of the east 48 acres of the south 68 acres of the J. A. Ainsworth Survey No. 21, A-2,197.

CENTRAL WEST FIELDS

(Continued from Page 72)

Township, the Ohio Fuel Gas Co. has a gas well in No. 1-4,948 on the Hobart Miller farm, Section 17, and an average gas well in No. 1-4,901 on the Charles Harkins farm, Section 2, in the lower Cow Run from 702-06 feet. Choquill and others have a fair gas well in a second test on the Anna M. and J. H. Crew, Section 27, Malta Township, in the Berea from 1,505-25 feet, total depth 1,527 feet. The Kemrow Co. is drilling on the L. A. Boyd farm, Section 16, Penn Township. Pure Oil Co. has a light gas well on the Jacob Fisher, Section 20, York Township, in the Berea sand from 1,340-46 feet. Same company made a location for a second test on the Jesse G. Eppley farrm, Section 28, same township.

INDIANA

The best producer found in Indiana was F. B. Hillis, trustee's No. 3 in the northeast corner of the W. H. Lindy, NW Section 31, Clay Township, Pike County, which produced 80 bbls. initial from 1,296-1,310 feet. This area is showing some very nice wells, as the previous week showed one with an initial of 100 bbls. drilled by William Bell and others on the Fred Lindy, same section. As soon as weather conditions are such that development work can be done to advantage the area should get a nice play. In this same township. William Bell and others are drilling No. 2 Fred Lindy, Section 31. Reicher and others are drilling on the Charles McAtee farm, Location 146. Charles C. Taliaferro, Jr., is drilling No. 2 Mary McAtee, Location 146, and No. 5 Della Kime, Location 12. Texana Oil Co. is drilling No. 1 John Ford, in Location 9, same township. Charles C. Taliaferro, Jr., is drilling on the Frank Demott, Section 7, Jefferson Township, same county. L. N. Savage and others are working at No. 2 on the Byron Preston, Section 30, Washington Township, same county. O. L. Diver is drilling on the Robert Watson, Section 14, Logan Township, same county. The Wiser Oil Co.'s No. 1 Everet Loveless, Section 23, same township, that started at 20 bbls. has dropped to 3 bbls. a day under pump.

In Daviess County, L. G. Gee and others are drilling No. 3 J. M. Peak. Section 28, Veale Township.

In the Siosi Pool, Prairie Creek Township, Vigo County, the Siosi Oil Corp.'s No. 17 in the northeast corner of the William Riggs, Section 32, pumped an initial of 30 bbls. from 2,214 feet and No. 18 is drilling. This company's No. 8, same farm, is being made a deep test, Hamil & Dill's test in the SW cor. of the Prevo-Frakes, SW NE, Section 32, pumped 20 bbls. initial at 2,191 feet.

Trenton Rock Area

In the old Trenton Rock area of northeastern Indiana, very little new work is being done, although in its early days it was among the best in the country. In Penn Township, Jay County, the Amber Oil Producing Co. has abandoned Nos. 30, 33 and 34 L. Grissell farm, Section 21, near Pennville. The Pennville Oil & Gas Co. abandoned Nos. 6, 7, 8 and 11 G. F. Gemmill farm, Section 27, same township. Turkey Creek Oil Co. abandoned old Nos. 1, 2, 3, 4 and 5 L. Horn farm, Section 4, Knox Township, same county.

Two wells are under way in Adams County, where Rosenthal and others are drilling No. 2 Bollenbacher heirs, Section 34, Blue Creek Township, and Scoofakes & Huffaker are drilling No. 5 on the Clark Stanley farm, Section 34, Wabash Township, same county.

In southwestern Indiana, in Columbia Township, Gibson County, the Roxana Petroleum Corp. is drilling No. 3 George Allen, Section 22, and the Texana Oil Co. is drilling No. 1 L. W. Gudgell, Section 25, same township. Same company is drilling a second test on the Sam Mitchell farm, Section 33, Center Township, same county.

In the extreme southern part of the State operators are slow in bringing in wells. In Perry County, John McClurkin and others are still working on the Andrew Lucke, Section 31, Anderson Township. Hitchen & Robinson are drilling No. 1 Doc Schneider, 3 miles west of Tell City, in Section 22, Troy Township. McClurkin and others are at work on No. 1 Frank Dalaissa, 2 miles east of Bristow, Section 25, Clark Township, and W. J. Brown is reported to have started a well on the Arthur Ray farm, offsetting the well recently drilled by Daugherty and others.

The Mich-Ohio Oil Co., as soon as weather will permit, will start active development work in Jasper County, in the extreme western part of Indaina, and in the Kankakee Valley, about 90 miles southwest of South Bend.

ILLINOIS

Just at this time the great activity in Illinois is centered in the western portion along the Mississippi River, south of East St. Louis, and good results are being obtained at very shallow depths, the oil being found in the Trenton lime formation. The greater part of this development is in the Dupo Field, in Sugar Loaf Township, St. Clair County. The work in the western portion is not confined alone to St. Clair County, but on islands in the Mississippi River. The supposition is oil will be found across the west side of the river in both Missouri and Iowa. A test is already being drilled in St. Louis, on the Missouri side of the river by the Hoffman Brothers Construction Co. on their own property.

In the Dupo Field of St. Clair County, Ellis & Thomas' No. 3 Charles LaCroix land, Section 28, pumped an initial of 15 bbls. from the Trenton from 476-506 feet. Same firm's No. 1 Herbert Onstott lot, Section 21, Sugar Loaf Township, will make a 3-bbl. pumper from 569-85 feet. House and others' No. 1 Fred Metter, NE Section 34, same township, is a dry hole from 750-80 feet. There are 30 strings of tools working in the Dupo Field and nearby areas. A wildcat well is being drilled by Thomas Cain and Pollock on the David Patton property, Location 3, Section 32, Washington County.

In the Waterloo Field, Monroe County, Madrill and others are drilling No. 1 Charles F. Fehr, Location 3, Section 36, and Abbott & Connelly are drilling on the Demit-Hardy property, Location 4, same section.

In the Allendale Field, Wabash Township, Wabash County, the Cisil Heirs Oil Co. is drilling No. 5 Cisil heirs, Section 1, and the Arkansas Fuel Oil Co. is drilling a second test on the John Payne, Section 8, same township.

Some new work is starting in the Bridgeport Field of Lawrence County. The Ohio Oil Co. is drilling No. 47 L. A. Buchannan farm, Section 2, Dennison Township. Same company is drilling No. 19 on the A. B. Buchannan, Section 11, and No. 20 on a part of the same farm, but in Section 1, same township. Risley and others are drilling on the Liman Brooke farm, Section 23, Dennison Township. In Lawrence Township, same county, the Ohio Oil Co. abandoned No. 7 G. H. Gillespie farm, Section 15.

In the Robinson Field, Honey Creek Township, Crawford County, Fred Burns & Son's test on the Rachel Painter, Section 33, is a dry hole at 1,171 feet. Associated Producers Co. is drilling No. 7 Viola Dees, Section 28, Oblong Township. Mattox & McCoplin are drilling on the William Conrad, Section 21, Montgomery Township. In Prairie Township, same county, Knoll & Ellison's No. 3 well, 1,000 feet from the south line and 200 feet from the east line of the William Akeman, NE Section 2, pumped an initial of 50 bbls. at 946 feet. No. 4, same farm, is drilling. Arkansas Fuel Oil Co. is drilling on the John McClain, Section 2, and No. 1 on the John Vaughn, Section 33, Prairie Township.

Alspaugh and others drilled a dry hole on the M. L. Briscoe, Section 33, Westfield Township, Clark County.

FEWER BUT BIGGER WELLS FEATURE IN DECEMBER

(Continued from Page 150)

Marion	1	0	1
Washington	0	2	2
Total December	1	4	5
Total November	1	5	6
Difference	0	1	1

KENTUCKY
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Warren	0	0	0	0	0	3	3
Allen	0	0	0	0	0	6	6
Ohio	51	2,518	13	6	1	61	62
Daviess	16	461	3	0	2	34	36
Hancock	2	2	0	1	0	2	2
McLean	1	5	0	0	0	3	3
Henderson	0	0	0	0	0	9	9
Webster	0	0	0	0	0	2	2
Muhlenberg	0	0	0	0	0	11	11
Hopkins	1	0	0	1	0	8	8
Butler	0	0	0	0	1	1	2
Breckenridge	0	0	0	0	1	1	2
Christian	0	0	0	0	2	3	5
Union	0	0	0	0	0	1	1
Cumberland	0	0	0	0	0	2	2
Logan	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Wayne	6	13	2	0	0	4	4
Powell	0	0	0	0	0	1	1
Estill	1	1	0	0	0	4	4
Morgan	0	0	0	0	0	1	1
Wolfe	1	3	0	0	0	0	0
Lee-Owsley	0	0	0	0	0	2	2
Lawrence-Johnson	1	5	0	0	0	0	0
Johnson-Magoffin	0	0	0	0	0	4	4
Floyd	0	0	0	0	0	1	1
Clay	0	0	0	0	0	2	2
Jackson	1	0	0	1	0	1	1
Knox	0	0	0	0	0	2	2
Total Dec.	81	3,008	18	9	7	172	179
Total Nov.	143	5,271	35	15	13	166	179
Difference	62	2,263	17	6	6	6	0

MONTANA
Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Cat Creek	0	0	0	0	0	1	1
Kevin Sunburst	15	101	10	0	11	11	22
Pondera	2	555	0	0	2	2	4
Miscellaneous	13	34	4	7	7	72	79
Total Dec.	31	690	14	7	20	86	106
Total Nov.	28	344	11	6	21	96	117
Difference	3	346	3	1	1	10	11

NEW MEXICO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Chaves	0	0	0	0	0	4	4
De Baca	0	0	0	6	0	2	2
Eddy	1	0	1	0	3	10	13
Lea	3	0	2	1	13	31	44
McKinley	3	0	3	0	2	7	9
Rio Arriba	0	0	0	0	1	4	5
San Juan	0	0	0	0	4	11	15
Torrance	1	0	1	0	1	2	3
Miscellaneous	0	0	0	0	4	11	15
Total Dec.	8	0	7	1	28	82	110
Total Nov.	10	776	5	1	28	77	105
Difference	2	776	2	0	0	5	5

UTAH
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Total Dec.	2	0	2	0	2	29	31
Total Nov.	0	0	0	0	3	26	29
Difference	2	0	2	0	1	3	2

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Boulder	0	0	0	0	0	5	5
Fremont	3	10	2	0	1	16	17
Jackson	0	0	0	0	0	5	5
Larimer	0	0	0	0	3	7	10
Las Animas	1	0	1	0	2	4	6
Mesa	1	0	1	0	0	2	2
Moffat	0	0	0	0	12	4	16
Montezuma	1	0	1	0	0	0	0
Pueblo	1	0	1	0	1	2	3
Rio Blanco	0	0	0	0	0	2	2
Routt	1	122	0	0	2	0	2
Yuma	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	1	28	29
Total Dec.	8	132	6	0	22	77	99
Total Nov.	6	0	5	1	19	75	94
Difference	2	132	1	1	3	2	5

WYOMING
Summary of Field Operations

Dist. or County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Sayt Creek	0	0	0	0	2	4	6
Big Horn	0	0	0	0	0	7	7
Carbon	1	0	1	0	0	15	15
Fremont	0	0	0	0	0	10	10
Hot Springs	1	50	0	0	0	4	4
Lincoln	0	0	0	0	1	7	8
Natrona (exc. Salt Creek)	0	0	0	0	1	6	7
Park	2	563	0	0	5	25	30
Sweetwater	0	0	0	0	2	11	13
Sublet	1	100	0	0	3	19	22
Weston	3	10	2	0	1	2	3
Uinta	0	0	0	0	3	13	16
Miscellaneous	0	0	0	0	5	8	13
Total Dec.	8	723	3	0	23	131	154
Total Nov.	19	5,480	7	2	24	134	158
Difference	11	4,757	4	2	1	3	4

EASTERN FIELD
Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	46	89	0	0
Bradford	171	478	0	0
Venango-Clarion	21	21	2	3
Butler-Armstrong	8	4	1	3
S. W. Pennsylvania	13	28	3	3
West Virginia	67	187	8	32
Southeast Ohio	75	1,293	16	49
Total December	401	2,100	30	90
Total November	588	3,592	39	64
Difference	187	1,492	9	26

Summary of Work under Way

Field—	Rigs	Drlg.	Ttl.
Allegany	8	31	39
Bradford	54	119	173
Venango-Clarion	2	20	22
Butler-Armstrong	3	15	18
Southwest Pennsylvania	2	31	33
West Virginia	39	104	143
Southeast Ohio	30	101	131
Total December	138	421	559
Total November	136	508	644
Difference	2	87	85

LIMA FIELD
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Wood	4	18	2	0	1	1	2
Hancock	2	32	0	0	0	9	9
Allen	2	65	0	0	0	2	2
Auglaize	1	0	1	0	1	2	3
Sandusky	3	30	1	1	0	2	2
Mercer	0	0	0	0	0	1	1
Seneca	3	0	2	1	2	8	10
Lucas	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Wyandot	0	0	0	0	1	0	1
Henry	1	0	1	0	0	0	0
Crawford	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Huron	0	0	0	0	0	2	2
Total Dec.	16	145	7	2	5	31	36
Total Nov.	21	462	5	2	5	33	38
Difference	5	317	2	0	0	2	2

ILLINOIS FIELDS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Clark	2	45	1	0	0	0	0
Crawford	7	85	4	0	1	8	9
Lawrence	4	135	1	0	0	5	5
Wabash	5	135	2	0	0	3	3
Saline	2	0	2	0	0	0	0
Clinton	0	0	0	0	0	2	2
Effingham	0	0	0	0	0	1	1
Randolph	0	0	0	0	0	2	2
Monroe	1	0	1	0	0	4	4
St. Clair	22	852	6	0	0	30	30
Washington	0	0	0	0	0	1	1
Total Dec.	43	1,252	17	0	1	56	57
Total Nov.	27	714	8	0	1	50	51
Difference	16	538	9	0	0	6	6

CENTRAL OHIO FIELDS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ashland	7	0	4	3	7	12	19
Medina	3	7	1	0	0	7	7
Lorain	5	0	1	4	2	4	6
Wayne	6	0	1	5	2	7	9
Holmes	4	40	1	2	4	6	10
Cuyahoga	1	0	1	0	0	0	0
Ashtabula	0	0	0	0	1	3	4
Richland	2	0	0	2	3	2	5
Knox	2	0	0	2	5	9	14
Coshocton	3	82	0	1	1	4	5
Summitt	10	0	3	7	3	20	23
Licking	10	254	0	2	8	12	20
Muskingum	15	353	3	5	4	20	24
Athens	12	3	2	9	8	8	16
Meigs	10	23	1	6	1	7	8
Jackson	2	0	0	2	6	7	13
Vinton	4	35	1	0	4	2	6
Lawrence	1	0	0	1	0	1	1
Tuscarawas	2	140	0	0	1	4	5
Stark	2	0	0	2	2	3	5
Portage	1	0	1	0	0	0	0
Fairfield	0	0	0	0	1	2	3
Scioto	2	0	2	0	0	0	0
Guernsey	5	130	1	1	3	10	13
Belmont	3	0	1	2	0	5	5
Pike	3	0	1	2	0	0	0
Gallia	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Total Dec.	115	1,067	25	58	66	157	223
Total Nov.	145	1,491	36	67	60	198	258
Difference	30	424	11	9	6	41	35

INDIANA FIELDS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Drg.	Ttl.
Adams	1	15	0	0	0	2	2
Gibson	0	0	0	0	1	4	5
Pike	3	183	0	0	0	8	8
Daviess	1	0	1	0	0	3	3
Clay	0	0	0	0	0	1	1
Vigo	2	50	0	0	0	2	2
Sullivan	0	0	0	0	0	1	1
Spencer	1	0	1	0	0	2	2
Warrick	0	0	0	0	0	2	2
Perry	0	0	0	0	0	4	4
Fountain	0	0	0	0	0	1	1
Greene	0	0	0	0	0	2	2
Crawford	0	0	0	0	0	1	1
LaGrange	0	0	0	0	0	1	1
Posey	0	0	0	0	1	1	2
Johnson	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Morgan	0	0	0	0	0	1	1
Madison	1	0	0	1	0	0	0
Marshall	0	0	0	0	1	1	2
Monroe	2	5	0	1	0	0	0
Jasper	0	0	0	0	0	2	2
Lake	0	0	0	0	1	0	1
Total Dec.	11	248	2	2	4	41	45
Total Nov.	34	260	15	8	5	41	46
Difference	23	12	13	6	1	0	1

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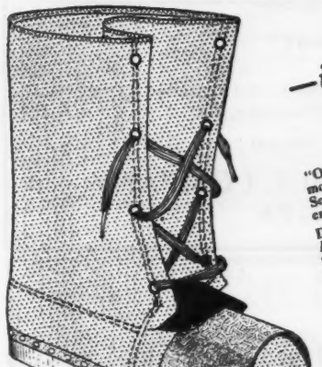

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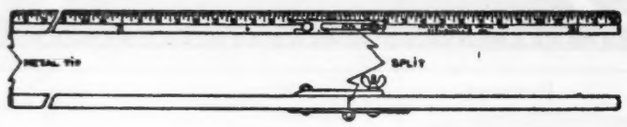

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MICHIGAN FIELDS
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Muskegon	12	745	1	2	1	8	9
Isabella	19	1,745	4	0	26	35	61
Midland	1	0	1	0	14	7	21
Kent	0	0	0	0	2	2	4
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	0	5	5
Mason	1	0	0	1	0	3	3
Newaygo	0	0	0	0	2	10	12
Manistee	2	0	0	2	0	1	1
Montcalm	0	0	0	0	0	2	2
Alpena	0	0	0	0	1	1	2
Tuscola	0	0	0	0	0	1	1
Cass	0	0	0	0	1	4	5
Clare	0	0	0	0	2	5	7
Lake	0	0	0	0	0	4	4
Saginaw	1	15	0	0	0	2	2
Emmett	0	0	0	0	0	1	1
Delta	0	0	0	0	0	1	1
Kalkaska	0	0	0	0	2	1	3
Branch	0	0	0	0	0	1	1
Montmorency	0	0	0	0	1	0	1
Barren	1	0	1	0	0	1	1
Ingham	0	0	0	0	0	1	1
Gratiot	0	0	0	0	4	5	9
Monroe	0	0	0	0	2	1	3
Iosco	0	0	0	0	1	0	1
Missaukee	0	0	0	0	1	0	1
Eaton	0	0	0	0	0	1	1
Jackson	0	0	0	0	1	0	1
Allegan	1	0	1	0	2	1	3
Kalamazoo	0	0	0	0	0	1	1
Presque Isle	0	0	0	0	1	0	1
Huron	0	0	0	0	1	0	1
Sanilac	0	0	0	0	1	0	1
Calhoun	0	0	0	0	1	0	1
Livingstone	0	0	0	0	1	0	1
Total Dec.	38	2,505	8	5	68	107	175
Total Nov.	32	4,093	13	0	56	138	194
Difference	6	1,588	5	5	12	31	19

NATURAL GAS SURVEY MADE IN MICHIGAN

(Continued from Page 84)

lower Traverse gassers on a single lease on the flats.

The four gas pipe lines and their present daily average sendout is as follows: West Michigan Consumers Co., 3,500,000 feet; Muskegon Pipe Line Co., 2,500,000 feet; Muskegon Traction & Lighting Co., 2,000,000 feet, and Continental Motors Corp., 1,000,000 feet. The total is 9,000,000 feet a day.

Operators of each of the four pipe lines and residents throughout Greater Muskegon have been hoping that one or more operators in the field would drill a deep test to the Niagara or Trenton formation in an attempt to find new gas production in the lower formations. It now appears that no such test will have been completed in time to save the necessity of changing back to artificial gas at least for the domestic consumers and for much of the industrial work.

Some operators in the field have indicated that if enough were paid or if they were assured of getting enough for their gas more of them might be interested in developing a new supply of natural gas in lower formations. Operators were paid as low as 5 cents per 1,000 feet for gas produced in the Dundee and Traverse sands. Some were paid 15 and 18 cents per 1,000 feet but the average was considerably less than 10 cents per 1,000 feet.

In summary the survey indicates that while there is enough casinghead gas going to waste daily in the Muskegon Field to supply the demands of domestic and commercial production of Greater Muskegon there is no way to get it and make a profit for the pipe line company which might attempt to save the wastage. It also indicates that unless the oil operators are assured of a greater return from any new gas supply which they might discover in deeper formations in or near the Muskegon Field they will not be encouraged to drill for it.

A promising show of gas recently was encountered in a wildcat near Ravenna, only 20 miles from the Muskegon Field. It was struck in a deeper formation and is considered an indication of probable success in deeper formations in the Muskegon Field. The operators, however, have no market for their gas at Ravenna and they have too small a supply at present to warrant piping it to Muskegon. So they are drilling on for oil which they can market no matter where they find it.

The future of the natural gas business in Greater Muskegon cannot be predicted but it is certain that everything that can be done is being done to save the present supply.

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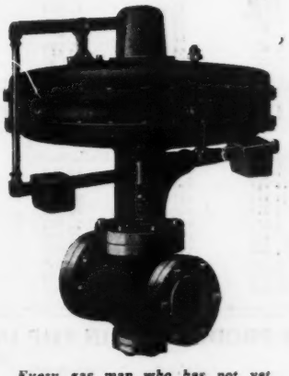

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR NOVEMBER, 1929

Runs

Company—	Month (bbls.)	Dy. av. (bbls.)
Prairie P. L. Co.*	4,620,000	154,000
Gulf P. L. Co.	1,748,975	58,299
Texas P. L. Co.	756,387	25,213
Magnolia P. L. Co.	1,630,495	54,350
Empire P. L. Co.	1,625,698	54,190
Cosden P. L. Co.	798,835	26,628
Sinclair P. L. Co.*	2,820,000	94,000
Oklahoma P. L. Co.	3,092,396	103,080
Other lines*	5,520,000	184,000
Total November	22,612,786	753,760
Total October	24,266,273	782,783
Difference	1,653,487	29,023

Shipments

Prairie P. L. Co.†	6,192,204	206,407
Gulf P. L. Co.	1,892,038	63,068
Texas P. L. Co.	1,277,071	42,569
Magnolia Pet. Co.	2,247,152	74,905
Empire P. L. Co.	1,441,860	48,062
Cosden P. L. Co.	859,728	28,657
Sinclair P. L. Co.†	3,458,090	115,270
Oklahoma P. L. Co.	3,228,946	107,632
Other lines*	6,210,000	207,000
Total November	26,807,089	893,570
Total October	27,633,003	891,388
Difference	825,914	2,182

Stocks

Prairie Oil & Gas Co.*	38,123,700
Gulf Pipe Line and Gypsy Oil Co.	10,057,895
The Texas Company	6,982,264
Magnolia Petroleum Co.	8,000,416
Empire Oil & Refining Co.	5,751,909
Mid-Continent Petroleum Corp.	3,600,903
Sinclair Crude Oil Pur. Co.	20,114,000
Oklahoma Pipe Line Co.	3,718,953
Carter Oil Co.	9,421,386
Other companies	25,574,000
Total November	131,355,426
Total October	133,042,778
Difference	1,687,352

*Estimated. †Prairie and Sinclair shipments include Texas oil.

EASTERN PIPE LINE REPORT FOR MONTH OF NOVEMBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct. '29	Nov. '29
Nat. Transit	404,122.07	426,302.38
S W Pa P L	94,485.54	82,952.71
Eureka P L	407,367.33	357,808.48
Buckeye P L (Mackasburg)	368,647.98	334,853.69
Buckeye P L (Cleveland)	12,971.28	10,941.76
Buckeye P L (Lima, etc.)	111,929.62	94,141.89
Indiana P L	5,168.79	5,047.91
Cumberland P L	197,918.75	176,386.64
N Y Transit	32,746.64	31,674.21
Tide Water P L		23,927.23
Pure Oil	290,221.77	296,627.59
Paragon Dev.	13,726.53	11,938.81
Stoll Oil Ref.	5,077.57	4,324.62
Bradford Trans.	414,513.56	387,990.83
Total	2,358,896.43	2,244,919.15
Daily average	76,093.43	74,830.64

Note—Paragon Refining Co. had other receipts of 193,678.88 bbls. Paragon Development had other receipts of 171.69 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct. '29	Nov. '29
Nat Transit	601,799.57	610,866.22
S W Pa P L	332,869.58	335,147.92
Eureka P L	228,566.66	241,823.95
Buckeye P L (Mackasburg)	196,645.46	200,936.77
Buckeye P L (Cleveland)	2,185.51	1,694.86
Buckeye P L (Lima, etc.)	1,676,756.01	1,293,017.06
Indiana P L	1,425,999.12	1,380,193.50
Cumberland P L	178,996.97	185,762.53
Southern P L	64,066.81	63,391.67
N Y Transit	292,940.39	265,488.60
Northern P L	168,667.97	173,230.28
Tide Water P L	280,269.87	324,984.88
Pure Oil	290,992.65	307,123.47
Paragon Ref.	175,750.89	192,159.25
Paragon Dev.	15,869.35	12,438.47
Bradford Trans.		494,038.59
Total	5,932,376.81	6,082,298.02
Daily avg.	191,366.99	202,743.27

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of October and November:

	Oct. '29	Nov. '29
Nat Transit	719,388.96	725,641.66
S W Pa P L	498,919.11	526,381.77
Eureka P L	1,398,117.80	1,397,286.60
Buckeye P L (Mackasburg)	400,582.44	413,588.69
Buckeye P L (Cleveland)	48,885.71	74,272.48
Buckeye P L (Lima, etc.)	2,783,005.84	3,181,309.11
Indiana P L	747,719.04	716,629.97
Cumberland P L	562,259.60	552,617.51
Southern P L	339,742.96	308,180.02
N Y Transit	142,410.37	141,455.63
Northern P L	328,077.84	340,327.62
Tide Water P L	909,010.27	1,012,222.37
Pure Oil	20,118.60	20,999.86
Paragon Ref.	24,163.27	25,402.17
Indian Ref.	182,679.26	
Paragon Dev.	4,903.36	4,736.09
Tuscarora	265,678.11	267,510.68
Brad Trans.	65,438.84	159,975.37
Total	9,441,101.38	9,868,537.60
Decrease	1,965.57	
Increase		427,436.22

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of October and November showing gross stocks of the above fields:

	Oct. '29	Nov. '29
Pennsylvania	3,372,038.77	3,270,041.21
Lima	563,216.33	567,411.45
Kentucky	711,464.81	607,043.92
Mid-Continent	4,494,311.77	4,283,691.69
Illinois	299,569.70	283,720.25
Total	9,441,101.38	9,011,908.52

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
Jan.	55,630	56,209	52,904	51,749
Feb.	60,394	61,298	57,002	51,833
Mar.	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
June	61,121	62,757	58,230	58,833
July	63,206	58,674	57,144	66,087
Aug.	61,815	60,870	57,745	66,687
Sept.	64,639	60,285	53,487	67,315
Oct.	161,132	147,080	58,100	76,093
Nov.	67,774	57,275	53,865	74,831
Dec.	68,755	53,089	52,025	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
Jan.	156,056	141,227	146,465	165,721
Feb.	159,488	138,534	167,368	159,387
Mar.	150,239	133,777	158,883	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
June	160,267	149,772	188,024	185,404
July	160,045	151,850	189,470	194,763
Aug.	151,929	188,653	192,853	184,946
Sept.	158,915	144,213	194,138	201,214
Oct.	161,132	147,036	176,000	191,367
Nov.	172,608	150,975	176,898	202,743
Dec.	136,428	144,504	173,572	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
Jan.	9,718,008	12,276,710	7,596,6
Feb.	10,119,162	12,180,419	8,738,5
Mar.	10,794,044	12,239,725	9,002,0
April	11,112,295	11,749,125	8,978,1
May	11,359,381	11,602,468	8,903,6
June	11,493,673	11,287,678	8,921,2
July	11,458,128	10,819,331	9,211,5
Aug.	11,989,115	10,236,743	9,440,6
Sept.	12,212,716	9,660,910	9,442,0
Oct.	12,047,661	9,229,709	9,441,1
Nov.	11,939,740	8,366,553	9,868,5
Dec.	12,340,297	7,539,555	

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and accounted in the stocks and average reported above:

	Runs	Shipments	Stocks
1928—			
Nov.	2,663.53	788.47	19,426.5
Dec.	3,053.60	3,167.53	19,426.5
1929—			
Jan.	2,099.90		19,312.6
Feb.	2,469.47	6,873.20	17,009.2
March	3,330.82	3,595.01	16,745.0
April	4,864.07	4,243.59	17,365.5
May	2,688.59	2,455.54	17,598.5
July	2,947.62	3,329.35	4,503.4
Aug.	2,742.73	2,889.47	4,356.7
Sept.	2,925.71	2,897.34	4,385.1
Oct.	3,083.59	1,754.94	5,713.7

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Dec. 1	2,408,755.1
Runs from wells	541,181.5
Other receipts	250,705.1
Regular deliveries	427,064.6
Other deliveries	402,397.3

The amount of Illinois oil run by the Tidewater Pipe Co. in November was 23,927.23 bbls. Deliveries were none. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1928—		
Dec.	584,633.00	491,517.3
1929—		
Jan.	570,727.38	545,084.6
Feb.	517,330.17	503,387.7
March	728,319.67	586,049.6
April	515,374.27	654,297.9
May	608,981.60	673,812.3
June	568,454.70	818,845.9
July	611,106.79	823,159.4
Aug.	625,351.99	746,425.9
Sept.	582,457.66	669,947.7
Oct.	622,302.83	558,558.6
Nov.	565,108.75	427,064.6

Tidewater Pipe Co., Ltd., also delivered in November, 72,323.52 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
February	14,214	.....	38,750	17,250	11,607	81,821	.....	.....	.....	.....	3,750	85,571
March	19,903	968	31,258	18,581	7,355	78,065	.....	.....	.....	.....	.....	78,065
April	16,667	.....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	65,200
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	.....	62,903
June	14,866	3,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	80,484
August	20,389	3,129	35,226	18,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355
September	19,433	.....	31,824	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167
October	9,065	4,677	42,065	12,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
February	13,750	15,071	135,179	32,750	17,892	214,643	.....	34,357	821	143	35,321	249,964
March	18,548	26,064	145,516	39,162	28,162	257,452	.....	42,581	2,322	.....	44,903	302,355
April	19,733	18,367	137,233	50,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,646
June	31,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	32,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	.....	1,484	18,452	280,129
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300
October	39,936	10,519	137,096	38,160	38,644	264,355	6,613	13,388	11,064	4,419	35,484	299,839
November	23,633	18,900	126,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS (REVISED)

(In Barrels of 42 gallons)

1928-29		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
November:	Month	19,907,526	22,078,680	20,791,798	2,977,800	2,476,080	1,801,914	2,388,870	3,348,000	75,770,668
	Daily average	663,584	735,956	693,059	99,260	82,536	60,064	79,629	111,600	2,525,829
December:	Month	21,574,703	22,425,722	22,180,102	2,988,400	2,521,571	1,846,841	2,289,040	3,581,000	79,407,379
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,528
January:	Month	23,385,939	22,575,874	23,412,226	2,861,641	2,453,526	1,807,887	2,076,070	3,439,000	82,013,163
	Daily average	754,385	728,254	755,233	92,311	79,146	58,318	66,970	110,936	2,645,554
February:	Month	22,300,707	20,464,164	20,816,209	2,557,968	2,154,194	1,569,930	1,965,656	3,113,000	74,941,228
	Daily average	796,454	730,863	743,434	91,356	76,936	56,068	70,202	111,184	2,676,473
March:	Month	24,324,729	20,838,262	24,358,592	2,951,076	2,393,724	1,756,153	2,195,823	3,586,000	82,314,359
	Daily average	784,669	672,202	785,761	95,196	74,314	56,650	70,838	115,677	2,655,302
April:	Month	23,295,060	20,235,290	23,493,097	3,112,740	2,188,680	1,702,479	2,085,030	3,524,000	79,636,376
	Daily average	776,502	674,513	783,102	103,758	72,956	56,750	69,501	117,467	2,654,546
May:	Month	24,053,351	21,345,452	24,489,101	3,665,099	2,200,158	1,713,261	2,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,965	118,229	71,618	55,267	72,662	125,129	2,697,353
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	820,821	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	22,371,925	26,969,389	3,867,157	2,137,047	1,716,488	2,360,836	4,439,200	90,659,739
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,489
August:	Month	27,223,353	22,429,492	27,490,489	3,816,555	2,086,083	1,764,973	2,478,016	4,340,000	91,638,961
	Daily average	878,495	723,532	886,787	123,115	67,293	56,934	79,936	140,000	2,956,032
September:	Month	26,104,264	21,402,390	25,987,102	3,780,690	1,959,720	1,718,250	2,346,480	4,200,000	87,498,896
	Daily average	870,142	713,413	866,236	126,023	65,324	57,275	78,234	140,000	2,916,647
October:	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,600	88,390,346
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	144,000	2,851,306
	Total 12 months	290,496,046	257,550,010	291,098,901	39,644,744	26,613,080	21,054,083	27,012,047	45,818,600	999,287,511